THE ORGANIZATION OF MODERN BUSINESS

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BY

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FOREWORD

A DEFINITE trend in business methods has developed during the past few years. To succeed permanently, an enterprise must move in harmony with this trend; to resist it is to insure ultimate failure.

The communist's dream of production for use can never succeed until human nature is remade. Profit is the only spur to production. But the concern which looks first to profits is a beach-comber existing only from day to day. When, temporarily, as in a depression, the opportunities fail, such a business also fails.

The permanently successful business must first serve the customer, the workman and the community. Under reasonably good management the profits will surely follow and will be a direct measure of the value of the service rendered. This service does not consist of willingness to admit that "the customer is always right," nor promptly to send out a man to repair a product that should have been better made in the first place. It consists of making a product best fitted to its use, at a price to attract purchasers, at the same time enabling

proper wages to be paid to the workmen and to leave a sufficient profit for capital.

To do this requires a degree of standardization, and production in large quantities. Therefore, the plant must be a tool carefully designed to produce that product and, as a rule, nothing else. Having decided what product to make, that product must be made as well and as cheaply as possible and then sold. There will be no room for the concern which is ready to sell whatever the whim of the purchaser dictates, and then make it.

The author of this book looks at business with the cold eye of the industrial engineer whose sole test is continuous profits. His experience has been gained in consultation with more than a thousand clients.

He does not favor any panacea, but he does lay down in detail eleven rules for managing a business which his experience has shown are essential to permanency and profit.

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CHAPTER I

HOW BUSINESS MUST DEVELOP

A WOMAN bought a spool of cotton at a big department store and asked that it be sent. The merchant did not complain; he duly delivered the spool of cotton. But he delivered it in state in a five-ton truck manned by three men just as though it were a large and costly piece of furniture. He made the demonstration that he was after; he got plenty of publicity and he smashed the habit of having tiny articles delivered.

Yet in the business of to-day, if only the relations could be dramatized, we should find no end of ridiculously great powers moving tiny weights without attracting comment. The comparisons would be astonishing. We should find large and enthusiastic sales forces selling large

orders which the factory filled at a tiny profit or at a loss simply because it was not geared to make the articles that had been sold. We should find expensive machinery groping for its wage through scarcely one-quarter of its possible productive hours. We should find that it often costs three times as much to sell as to make. In short we should turn up no end of cases of the grossest profiteering by that greatest and most cunning of all profiteers—waste.

Waste! That is an old story. Just pick up a nut or a bolt here and there, use two inches less string per bundle, stop dotting the "i's" and crossing the "t's" and you save $50,000 a year!

Yes, we do waste a deal of material. Every dunce knows that. But the big wastes are not of material. The big wastes are rarely those of labor. The factory that uses every ounce of material and has the most conscientious workers in the world may be the greatest wastrel.

The important wastes arise through defective organization—through a lack of balance between the parts of a business and between the business and its markets. They are hard to detect. They may more easily arise through mistaken zeal than through carelessness. Many a "born salesman" has thus wrecked his com-

pany. I have in mind a specialty manufacturer who took unto himself a sales manager noted for "ginger"; that manager was an energetic and really good salesman. He tested the markets and found that several of the articles which the company had not pushed could be sold in large quantities. He made a drive and the orders welled in. All of which seemed splendid, for that particular article carried, according to the cost sheets, a fair profit at the sales price.

The orders came so easily that the manufacture of the new leaders had to be reformed. The company began to make them in quantity with rosy prospects; their other lines fell off. At the end of the first year the company profit was smaller than had been expected. At the end of the second year the red figures arrived. Then the president had an expert investigation made and it turned out that although the fast-selling articles could be made in small quantities at a profit, they could not be so handled as principal lines because the former low cost had been gained by the undue distribution of the factory overhead to a more expensive line. The factory manager insisted upon a revision of costs that brought up the price of the new leaders, the sales manager left in a huff, and every one was unhappy. And yet no

one was to blame. The company simply had not been organized for business.

In this case the organization was palpably bad. The bigger wastes are hidden by a superficial efficiency that is hard to penetrate. They are fundamental and they are of the highest importance because upon the elimination of them depends the structure of society. A convincing argument can be made that Socialism grows out of waste.

Let us take a lesson from the social revolutionist.

That sounds like an absurd sort of a thing to do, for about all that one ever hears of revolutionary socialism are the resounding shouts of those who would destroy. Indeed, I believe that a considerable campaign has been waged against revolutionaries on the ground that they steal pianos, have bad barbers, and are rude to women—at least I have seen quite a number of posters and articles developing these themes. I can easily conceive of a strong movement, especially in apartment houses, against pianos. A revolt against barbers is not unthinkable (it is a splendid tribute to the peaceful qualities of our citizens that they kill so few barbers), but the unshaven, plunging beast of the cartoons is no more typical of even the most ex-

treme social revolutionaries than is the fat, be-whiskered gentleman with the swollen paunch typical of the capitalist, or the upstanding gentleman wearing a square paper cap typical of the workman.

The odd part of it all is that while the henchmen noisily row, our real leaders of industry—the men who have the management of great affairs—are trying, in their way, to achieve exactly the same result as are the real socialistic leaders. That is an extraordinary fact which very few people realize, and which still fewer will grant even if they do realize it, for the terms that the two movements use are very different. They do not speak the same language and each is surrounded with what might be called the "lunatic fringe."

The employing class has deployed about it a number of stupid people who always insist that whatever is, must be. They are the men who want ever-lowering wages, who are the last to put in any sort of mechanical improvement, and who pride themselves upon being "hardheaded." The other lunatic fringe is composed of those who yell of the rights of man, who are forever on the street corners talking about doing less work for more money, who are fond of waving red flags and of starting riots.

The lunatic fringes talk incessantly and think sparingly, and together they tend to conceal that goods, not money, forms the basis of our life.

The largest contributing cause to reduced buying power of money is that the war took out of the world a stupendous amount of previously accumulated value, and then demanded the production of great quantities of goods to be at once destroyed. The new goods were produced at prices that had little relation to former values—that is, workmen, owners, agents, everybody, reveled in a fool's orgy of high profits under the delusion that money, not goods, represented purchasing power. When only a single group profiteers the results are satisfactory enough unless that group happens to control a basic industry such as steel, or coal, or transportation, for then it takes a long time for the rest of the community to adjust its values to the single new value set up and the process is so gradual that no one notices it. But when every one starts hilariously after the big money and gets it then the buying power of that big money shrinks like a $10 "all-wool" suit.

Economic truths such as these never get across in words. The stomach is the only

teacher. No one will be convinced that serving for five hours at $20 is not better than serving for ten hours at $10 until he discovers that although the five hours of service are rewarded by a bunch of paper which is said to be worth $20 those same five hours do not produce $20 worth of value—relating the value to the amount of food, clothing, and shelter the money will buy. He at once decides that $20 is not enough for him; he does not examine the service he is rendering for $20 for he is not accustomed to think in such fashion. It is only that $20 does not buy sufficient food, clothing, and shelter. He then arranges that instead of $20, he shall have $40 for his five hours. Within a little while the $40 is not enough; he insists upon more and more money until finally comes the time when he cannot exchange a truckload of money for a pittance of food, clothing, and shelter. After he has trotted his big wad of money around enough the idea begins to trickle through that perhaps after all something is queer about this money idea and that what he is really working for is not to get just specimens of the governmental art of engraving but for goods that he can consume or save and that the money was interposed merely to facilitate the exchange and not as an end in itself.

It does not take a genius to calculate that 3% on an investment is just as good as 6% if $30 will buy as much as $60, but it seems to take pretty nearly a genius to comprehend the result of this not uncommonly abstruse calculation.

Because we have distorted the expression of values, and because we have turned things upside down, out of it all is emerging the lesson which the Bolsheviki started out to teach and which, indeed, they might have taught had they not got lost on the way trying to prove that all men are equal.

The controlling thought of the social revolution is that a gross inequality exists in the distribution of the world's goods because production is adjusted to a standard of money instead of need. That the real purpose of production is to provide things to use, that there can be no other purpose, and that the capitalistic world has been trying to produce not for use but according to an arbitrary and wholly artificial standard of money. Therefore, they would right this condition by abolishing all private property, giving to each man the right to use—that is, they would pay for production in kind and thus only enough would be produced

to supply a standardized need of the community.

They say that under the present system, a manufacturer produces a certain number of articles at a certain price and without regard to the needs of the community, that he sells those articles at that price as long as the community will buy. When the community slacks its buying he shuts down his factory until the community has bought up his stock. Then he again begins to manufacture. When he shuts down, his workers starve and the articles he made are held for sale on an arbitrary scale of price and are thus always beyond the possibility of acquisition by the average worker. Under the Communist program the whole organization of society would change. Instead of having John Smith make hosiery and sell it through a chain of agents, jobbers, and retail merchants to, let us say, the employees of John Jones, who are making shoes and selling them through a chain of agents, jobbers, and retail merchants to the employees of John Smith, your social reformer would have these two factories owned by the State, would have them make for the State, and have the State distribute their products directly to those who

need them and not merely to those who could buy them. Every one would be certain always of having enough socks and shoes but never too many, and the employees of the respective factories would no longer be employees but would be merely members of the community helping to serve the needs of the community—which, when you finally analyze it, is all that they do anyway.

The "revolutionary" part arises through the attempt to abolish a certain desire on the part of many individuals to hang on to their property. The whole scheme, though perfect in theory, involves a greater faith in the unselfishness of society than the study of humanity justifies. We are trained to gage our respective worths in the world more or less by the size of our respective pocketbooks rather than by the acclaim that we receive. This is true only to a degree, however; many men prefer eminence to wealth and many men after they have gained wealth try to achieve eminence. Men never gain real acclaim through the possession of money. There has never been a multi-millionaire who attained the position of Colonel Roosevelt. The more money a man has the less he cares for it, and a friend who has closely studied the working of the

radicals tells me that whenever a so-called "Red" is brought before a jury his lawyers always try for a jury of rich men on the ground that the rich man is willing to judge fairly the propaganda to redistribute wealth while the comparatively poor man is not. But because we are what we are and have deeply ingrained in us the desire to acquire and to hold property, it is the dollar that will be used to score the business game, and especially since, without changing the method of scoring, the results in the way of general happiness can be the more quickly achieved than by any radical, revolutionary play.

Bolshevism as a term of violence will pass. One cannot keep on "raising Cain" forever, but the underlying principles of the social reform are gaining ground from year to year, and they must and will prevail, for the thought is gradually, through study, being brought home that we have not, generally speaking, any greater realization of what the sub-division of labor and the application of power have done to our social life than Watt had of the steam engine or Galileo of electricity.

Take a few glaring instances as shown by our very terms of expression. The words "overhead," "burden," or "expense" are ap-

plied to the charges that go into a product because of other than the actually consumed labor and material. The terms that we use connote that they were considered superfluous, that the product properly should carry only direct costs, and that everything else arose through some fault which it was the duty of management somehow or other to overcome. Yet to-day we are learning that actually cheaper production is often to be gained by vastly increasing this very expense which was once thought to be unnecessary for the reason, among others, that into this expense goes management, and management is the biggest thing in industry. We may find that the most expensive way of doing work is that in which the smallest possible charges for overhead enter.

Take another—shutting down the plant. Your old time manufacturer prided himself on never having a man on the payroll who was not producing, and he insisted that men instantly be laid off when work slackened, and that if the work became too low the plant be shut down. This was his idea of economy—the obvious economy. It is still the idea in certain industries which are celebrated for labor disorder and shifting product prices, as coal and iron. Now, however, a few of the more

astute manufacturers know that laying off people or shutting down a plant is an invitation to bankruptcy and that if they hope legitimately to come out on the right side of the ledger, they must fight with all that is in them to keep the wheels turning with new orders even if those orders have to be taken at less than cost. They know that they will lose less, manufacturing at somewhat less than cost, than by shutting down altogether.

Take salesmanship. Years ago we did not sell. We provided things and people came and bought them. Then it was discovered that very frequently people either did not know what they wanted or were careless of their needs. They would not buy—they had to be sold to. Thus evolved salesmanship. In the further course of its evolution it was discovered that people might systematically be induced to buy that which they neither needed nor wanted, and then developed the type of smart salesman who prided himself upon being able to "sell anything." For a time salesmanship was the thing—if one only evolved a great selling organization then everything else would care for itself. The "experts" made a ritual of salesmanship. If the salesman only made the proper hand and face movements at the same time re-

citing thoroughly tested and recommended incantations then his victim had to buy. But trouble came. The more successful sorcerers would sell more than their factories could deliver. The dejected individuals who had been hibernating in the factories modestly suggested that perhaps selling was not a thing in itself but a method of disposing of the factory product. During, and right after the War the cry was for production engineers—for people who would get the goods out, who would fulfil the sales promises. The next phase of the cycle is always one where concerns find themselves producing more than they can sell.

I shall revert to these subjects again in detail. I am now giving these illustrations only to demonstrate how little regard and how little true comprehension we have of the need for coordinating industry—how we have been, in a way, monkeying with the buzz-saw.

I am not expressing a lone and individual opinion generated amidst philosophical calm. My opinion has been formed from a close personal and organization contact with more than fifteen hundred factories. The American Society of Mechanical Engineers has stated similar conclusions in a set of principles:

1. Social and industrial unrest results from

the fact that human relations have not kept step with economic evolution.

2. Sharp social or industrial disputes are no longer private. Society is affected, therefore such cases must be subject to the decision of authorities based upon intrinsic, not arbitrary, law.
3. Every important enterprise must adopt competent productive management, unbiased by special privilege of capital or of labor, and disputes must be submitted to authorities based upon intrinsic law.

Well, what of it! What difference does it make to me! I have been getting by through these years, why can't I keep right on getting by!

It makes just this difference. The highest business thought is rapidly becoming scientific. The conviction has entered into the minds of nearly all students that whereas we have been fooling along, manufacturing for money, we must really manufacture for service, that the true selling price is not what the traffic will bear but is based upon cost, and that the man who does not realize this and does not so shape his business that its various sections will exactly coordinate cannot possibly compete with the man who puts the scientific idea into practise.

Or, in terms of money, profit succeeds service. And no service, no profit!

Let me qualify this word "service." It has been hideously abused and cheapened. Frequently it is used to describe palaver, and buncombe, and costly furniture, and servile clerks, and the other scenery that commonly surrounds putting over something at a high price; or again it may mean the free repairing of an article during a certain period, most of which repairing would not be necessary had the article been made right in the first place.

Real service consists in giving the best possible article to the community at the fairest possible price, at the same time providing adequate and adequately paid labor and a proper portion of profit for the capital invested.

There is nothing contradictory between a low price to the public, a fair wage to the workers, and a fair profit to the owners. If the balance wheel of a business is properly adjusted these several wholly desirable results will be achieved. If it is not adjusted they will not be achieved. Only skilled planning and foresight can make the adjustment. Any one who does not care whether or not he reaches all of these several goals might as well get out of

business and save money. For eventually he must lose.

The man who has coordinated to produce values is the man who will stay in business. For real values do not change. A pair of shoes, for instance, has a definite economic value; so has a piece of land that will produce a certain crop. A man with a ham is better off than a man with a van of paper money that will not buy it. No financial legerdemain can grow wheat on an acre of greenbacks.

The man who has values—who has a farm that will produce, a factory that will produce—has something which renders him independent of financial changes, for then he is able to exchange goods for goods which is what we are going to get around to, although hardly in such an obvious fashion as I have stated.

Now, it may seem that we are wandering from our thought of service, and from our thought of coordination, and getting into the speculative realms. We are doing nothing of the kind. I am merely trying to sketch in the background to show the reason for business, to show why and how business must develop. I say *must develop* because it is so developing.

CHAPTER II

FIRST MAKE—THEN SELL

You can walk into any first-class tailoring establishment in London at any time before noon, order any kind of a suit, and if you are in a hurry you can have it fitted during the afternoon and delivered, complete and ready to wear, before eight o'clock in the evening. Is not this a rare combination of speed and efficiency that should shame an American? No matter what the emergency, an American tailor will not even in the dullest times agree to make and deliver under three or four days.

The English shop has its men on the second floor; they do the major part of their work by hand, and if you are in a hurry it is only a matter of shifting the men from whatever they happen to be doing to your work. In the American tailor shop very few of the workmen would be on the premises—probably none other than the cutters and fitters. The cut materials would be sent out to be sewn together. Some two or three men would work on the trousers, several

more on the coat, and still others on the waistcoat. The finished suit would represent the combined operations of probably fifteen people. Most of these people would work by hand or with easily adjusted machines. These fifteen would turn out among them in a day many more suits than would the English tailors working a man or two to a suit. But the American tailor could not, without extraordinary difficulty get a single suit through all of them in the one day and the cost of such an emergency mobilization would exceed the price that he could legitimately ask for the garment.

Now, instead of the small American tailor, take a large factory making standardized ready-to-wear clothing. They turn out the finished suit assembled in perhaps less than an hour in the aggregate though the time may have been put in, in fractions. They have expert cutters and fitters, and as far as personnel is concerned are better equipped to complete a special suit in a hurry than the English shop could hope to be. Their buying capacity is large, they do much machine work, and they can sell a suit for less than the cost of the material to the ordinary tailor. Suppose I walk into the factory and ask for a suit cut according to some fancy of my own but out of mate-

rial which the factory already has in stock. I want that suit by evening. Suppose the manager were fool enough to grant my request. What would happen? This suit of mine would have to be routed through specially. Whenever it came to a department at least one machine in that department would have to be taken from the work on which it was engaged, readjusted, and the operator instructed. When the adjustments had been made and instructions delivered the particular operation required on my suit would take but a few minutes or seconds, and then the machine would be readjusted and go on with the volume work on which it had been engaged. This procedure would have to be repeated through perhaps a score or more of operations and by the time the suit was done the mere making would have cost the firm anywhere up to a thousand dollars!

The Englishman could have made that suit at his regular price and at a profit. The American tailor might have made it at three times his regular price but without a profit, while the American company, highly organized for work and capable of giving the highest quality of service at the least possible cost, could not have made that suit at any price within reason.

On the other hand the English tailor would

have been at sea if some one had ordered from him 5,000 size 40 sack suits. It would have taken him months to turn them out and although he might buy his cloth much cheaper than the American and pay his tailors less he could not seriously compete with the American clothing manufacturer. To the one it would have been an epochal order; to the other a mere incident.

Comparing these three examples we have before us in a crude way the development of manufacturing and a hint of what a new and extraordinary force is contained in the application of power and the sub-division of labor, and especially the new rôle as assumed by management.

In the case of the hand workers, management meant merely providing them with work and keeping them in general order. Their only cooperation was in not getting in one another's way. With the American custom tailor, management grew apace for the garments had to be assigned to the several workers on some basis by which the various operations would be done more or less sequentially, in order that one man might not be too busy and another idle. In either case, however, if there were no garments to make then there was no one to

pay—that is, the labor cost ceased with the work and what little machinery might be employed was so inexpensive that its idleness could not cut any considerable figure. But with the big clothing manufacturer a new and very important element enters. That company has a plant representing much money. It has a deal of machinery and although the individual machines may not be of a very expensive character their aggregate value is large. If that company stops work for lack of orders, their charges do not cease. Only the wages cease. The interest on the plant keeps right along and so do the salaries of the managers and of the foremen. The skilled direction cannot be picked up off the street whenever needed. It must be trained and kept. Idleness does not represent only a loss of profit; it calls for out-of-pocket payment. The charges of idleness are positive, not negative.

And another very great difference is noted. The individualistic shop can do what it pleases, but the factory is limited in scope. The machinery has been attuned, so nicely attuned, to a certain kind of work that even a comparatively slight change in operations will destroy the profit for the time being while an emergency suit of clothing such as I mentioned can hardly

be undertaken at any price. The adjustments are more expensive than the product.

Thus we begin to grasp what is becoming a cardinal principle of industry—that one cannot profitably sell and then make, but one must so coordinate the making and selling as to form a production scheme for the establishment. This is the gospel of volume production; when realized in its fulness it will be discovered to mark out the metes and bounds of selling, the kind of machinery, the kind of labor employed, the planning and location of the building, and, if one cared to accept some current theories, it would determine the shape of the nose of the office boy who ought to be employed.

The old manufacturing was opportunist. When the plant investment was small and every worker was skilled it did not make much difference what kind of an order came in so long as it was within the general scope of the firm's experience. A certain universality became a matter of pride as, for instance, the English tailor I have mentioned would have been insulted if any one had suggested that perhaps he did not know how to make a pair of riding breeches, while the great clothing factory would just as promptly answer that it could not make a pair of riding breeches but it might make five

or ten thousand pairs—which would be a touch of the same pride, for probably that clothing factory could not learn to make riding breeches at a profit unless it made many more than ten thousand. If the sales manager of that factory sold ten thousand pairs of riding breeches and the production manager suggested that although the price seemed high enough to be profitable he was very doubtful if he could make them at a profit, there would be a tremendous rumpus throughout that establishment, and if the president happened to be a salesman, as probably he would be, that production manager would be informed that it was his business to get out what the sales department sold and not to indulge in cost speculations.

And probably that sales manager would get his way and keep right on getting his way until a competitor appeared who made but one thing, or at the most a few things, and stuck to his standards. Then the sales manager would discover that he could not compete against the newcomers on certain articles and would stop making them and at the end of the year it would be discovered that the place had been run at a loss. For more than likely the company, having given itself up to the selling side, would

have been counting the gross profit of the year and would not have investigated the profit per line.

A striking case of this occurred with a specialty manufacturer making a large line. On a certain type of article which we may call "A" they took old machines of other makers in exchange. Some of the second-hand stuff they sold but the most of it they junked, for they thought their profits were so high that they could make the allowance with profit. On another line "B" they had no exchanges and that line they sold at what they thought was a good profit. But "A" was the leader. Another company came into the field and cut out the market on the "B" goods by offering something which was not only better but much lower in price. At the end of the year the "A" sales were record-breaking—but the company had lost money! A cost accountant made an examination; he found that every sale on the "A" line with an exchange had been made at a loss and that the company had come through previously only because they had taken an exorbitant profit on the "B" goods. The moment a business-like competitor came into the field they were beaten on the "B" stuff.

Or take a rubber company doing an enormous business. They maintained branches everywhere and insisted that their dealers carry full lines. The dealers took the full lines but instead of stocking they found that it was much cheaper to carry only small quantities and replace them as sold. Some dealers would order three or four times a day; one dealer with a bill on an average of $4,000 a month bought on an average of 600 times a month. It cost $1.28 to put an order through the books. That is not high; it costs the best of the savings banks about a dollar to make a deposit or withdrawal entry. But having so many small orders loaded with bookkeeping charges ate into the company's profits. They found that because they had encouraged the idea that a dealer should order with a view to keeping his stock at a predetermined figure, that they lost money on 40% of all their orders.

It is not what you can sell that counts—but what you can sell at a profit. That profit cannot be found by lumped figures but only through detailed costs in connection with time studies. These costs and scientific studies will not merely show the costs but they will also point out ways for improvement, and highly specialized machinery and modes of work will be

evolved. And when you have attained this specialization you will discover that the whole selling plan must be changed, because to make at the least cost involves the smallest possible number of articles repetitively manufactured to a standardized design. Therefore to go back to the sales manager of the clothing factory, it is unlikely that those riding breeches, if the factory were well organized, could be taken at a profit unless a department were opened for them—that is, unless another division were to be established for riding breeches. And I say this in the full knowledge that clothing establishments do not commonly attain a very high degree of specialization and that they have not fully grasped the meaning of modern manufacture.

We introduce machinery for only one purpose—to make more cheaply than is possible by hand. An American road contractor finds a steam shovel cheap; he would not find it cheap in China because he could employ some thousands of hand workers at next to nothing a day. To-day, in America especially, and to a degree all over the world, the worker is expensive and demands certain rights. That will cause even more machinery to be introduced into our life—for the way to overcome high

wages is to get more out of a man and the way to get more out of him is to help him with the best tools—which mean power tools. The most efficient tool is one especially made or adjusted for the work in hand. The most efficient worker is the one who masters all of one subject or operation. The specialized tool is but an expense unless it be employed upon the work for which it was designed. It is a great expense indeed if left idle. Therefore it has not only to be kept continuously employed but employed at the work for which it is best suited which in turn means standardized production.

Thus, without knowing it, Nature is forcing us to the "twelve months" work idea. The natural progress of industry makes impossible the intermittent work against which the Bolsheviki and other social reformers complain and which is at the very root of the objections to that capitalistic scheme of affairs under which we live. When shutting down fell largely upon the workers, they had cause to complain; now shutting down falls just as severely upon the owner. The owner cannot generally make and then hold for a price because by the time he has sold off his stock the interest charges and depreciation upon the plant and the continuing expense of his organization have com-

bined to eat up more than the profit he hoped to get. Thus it is to the common advantage of the worker and the owner to keep the plant in operation.

The great wastes of idle capital are just beginning to be realized. Extensive researches made by industrial engineers and which are confirmed by my own experience are to the effect that because of the inexpert selling of a product—which usually means trying to sell at too high a price or selling that for which the factory is not equipped to make, thereby necessitating changes in arrangements of work, or faulty arrangements by which some machines have too much and others too little to do—the average machine in a factory is not working more than one-third of its time. If the capital which bought that machine expects to get a fair return it must get it at the expense of the worker and of the public—taking the near view. Taking the far view, it gets it at its own expense. The worker who receives less than a full wage has a decreased buying power. The public that gets an article at a high price cannot buy much of it and it must pass the higher price around the circle and thus eventually rob the capitalist's money of a part of its buying power.

Nobody gains out of waste. Nobody gains out of restriction of production—which is a form of waste. The manufacturer may think that he makes more money by restricting production and holding up the price. That is the controlling delusion of the steel and coal trades but it takes only the most elementary economic thought to discover that although by restricted production the number of dollars received in proportion to the work may be increased those dollars are very promptly robbed of their buying power. Production with the idea of making a large profit on a few articles is a vicious illusion. It is really not so odd that the social revolutionaries protest against it as it is that those who practise it believe that they are actually accomplishing what they think they are.

In the iron and steel industries, for instance, 40% of the capital invested is idle all of the time. If we utilized all of our coal resources to the utmost we could get all of the coal we needed by eliminating, it is estimated, about 80% of our mines and 80% of our miners—whose productive capacities could then be thrown into other branches of industry or agriculture. This would relieve the railroads of their single biggest burden which is the transport of coal, would require a smaller invest-

ment in rails, and permit a freer and cheaper transport of other commodities, and in the end we should all of us, steel operators, coal miners, and railroad men, have the capacity to buy much more than we buy to-day—even though we might not use so many counters in the buying process. That increased buying power would flow through every avenue of industry, everywhere increasing the demand.

That which is called standardization, then, is not a mere whim. The use of automatic machinery, the sub-division of labor, and the application of power are only narrowly to be regarded as manifestations of ingenuity. In their larger view they are parts of a social development in the way of making more things with fewer men. They are part of the transition of the man from the purely beast stage into the higher levels and there can be no stopping the progress, even if any one were so thick-headed as to desire to stop progress. The steady progression was interrupted by the war and now with the redistribution of wealth brought about by the war, the progress will go on with many times the former speed.

This is not philosophic imagining. The progression must be apparent to any one who views the signs of the times. You have only

to look at a Ford automobile passing to know that it is true. You have only to look at a typewriter to know that it is true. You have only to look at an adding machine to know that it is true. And the point is that the man who grasps this progression, who understands what is going on about him, is the man who will be equipped to prosper and go forward. The man who cannot see beyond the wart on his nose will be left by the wayside waving his arms like a windmill and protesting that things are not what once they were, which, by the way, is a protest that started some time before the Egyptian kings were good enough to live in order that the cigarette makers of to-day might have a nomenclature.

Or, to express the entire matter in a more concrete fashion, the larger money in manufacturing to-day is to be made through standardization, and standardization involves a nicety which we have not previously known in the planning of our operations. The selling, the production problems, and the labor problems are so cunningly interwoven in this new scheme of things that they cannot possibly be separated.

The reaction to standardization is at the first not wholly agreeable. The term brings to mind

a dull, drab world clothed in what amounts to a uniform, living all in the same sort of houses filled with impersonal standardized furniture and eventually reading standardized books and newspapers. Only a Teutonic mind could find joy in such a picture. But no such result need flow from standardization unless the standards are fixed by the State in a socialistic era.

If instead of "standard" we say "style" the picture is the less offensive. And when you examine styles you will find that they do not differ much; this woman whom you pass seems to be dressed quite differently from the next one but if you compare both of them with a fashion plate of 1800 you will find that they are nearer in style to each other (however different they may look) than they are to the old drawing.

It does not follow from standardization that we should all take on a certain sameness; articles of luxury will hardly be standardized. There is no reason that they should be for they will come under the art heading. But it is otherwise with the common utilities of the day. No one insists upon a distinctive design in frying pans; what is wanted is a good pan, and it does not sear the heart of Gotrocks to think that this scrubwoman may—in her home—have

an exact counterpart of the frying pan that graces his kitchen. No owner of a high-grade car objects to any one else in the world owning a car with an identical motor. It offends no one to have steel rails much alike. And neither do we insist upon distinctive styles in typewriters. We are content to choose a brand and are glad to know that we shall not have to go to the further trouble of picking out a first-class specimen.

And neither does standardization mean year after year uniformity and inflexibility of design, but it does connote that changes will be made only after thorough study and experiment and not to suit passing whims.

For instance, a firm in Birmingham making builders' hardware had, before the war, a large trade with the Colonies and the Orient. They had in their catalogue more than 20,000 items. Through more than a century they had held themselves open to make anything in the way of builders' hardware that perversity might demand and consequently they had accumulated a multitude of designs. In one style of door bolt they carried forty sizes; six would have answered all reasonable needs, but because a Calcutta merchant's grandfather had bought a certain style, he continued to order

that style. Practically every order was special and the lots rarely exceeded four or five gross. This prevented the introduction of automatic machinery or the development of repetitive methods—even had the unions consented to any labor-saving arrangements. After the war that company was faced with high wages. They had on hand a quantity of automatic machinery left over from munitions work. They could not well go back to their old plan of manufacturing for, according to their old costs, the labor charges would be prohibitive. Instead they took to heart their war lessons and embarked upon a program of repetitive operations. They cut their catalogue list down to about a thousand items—without sacrificing a single essential design or size. And even with this still large variety of articles they have already succeeded in absorbing practically all of the increased labor cost. They intend, just as soon as their customers become accustomed to the limited range of sizes, to make another drastic cut until eventually they hope to have their factory divided into a number of departments each of which will make but one thing. That is a remarkable example of a present-day transition from practically the era of hand work to that of machine work and demon-

strates the new factor of standardization that has to be present wherever machines are extensively employed.

The immediate fundamental change then between the old and the new style of manufacturing is that in the former one first sold and then made, and in the latter one makes and then sells. This seems simple enough in statement but in practise it involves a complete departure from the ancient method of selling along the lines of least resistance.

We should not expect a coal salesman discovering a demand for tin on his route to take orders for tin and then insist that the coal mine produce tin. We should quickly arrange for a psychopathic study of that man, but unfortunately the distinctions are not always so plain. A glove salesman, let us say, in the course of time develops a large acquaintance among haberdashery stores which sell many articles in addition to gloves. The shop that sells only gloves is something of a rarity. The glove salesman could, at practically the same selling expense, dispose of a line of scarfs, handkerchiefs, walking-sticks, belts, or any of the large number of articles that a haberdashery carries, yet it is fairly obvious that a glove-making concern is in no manner fitted to make up scarfs

unless it establishes a neckwear factory—which may or may not be in the same building as the glove making.

The salesman can handle a number of articles (the number depending wholly upon the personality of the man) and it has, indeed, sometimes been found advisable to have a salesman handle several lines in order to prevent him from overselling on a single line. A conspicuous example of this occurred in the career of a packing establishment. This establishment in addition to fresh meat, packed many kinds of tinned meat, conserves, and collateral foods. Being efficient manufacturers they rigidly separated their various products into departments and conducted the manufacture of each on an independent basis, but they went further in this independence and set up departmental sales managers and departmental sales staffs. Their sales were to retail grocers. The average retailer in groceries is held down to a strict credit limit. Consequently this large and diversified selling staff, each salesman selling only one product, nearly ruined the business of the company, for if the tinned meat salesman first struck the retailer he filled that man up on tinned meat to his credit limit and until that bill was paid the conserve man, or whoever else

happened to come along, was absolutely barred. Instead of a retailer having a complete line, he would usually be over-stocked in one branch and without a stock of any kind in the others. The remedy here was simple. Instead of having specialty salesmen covering a wide territory the company narrowed the territories and put a representative in each to handle the whole line. Then the company had its products distributed.

That is a case of efficient segregation in manufacturing offset by inefficient selling. They were trying to get the salesman to specialize but their markets would not permit of such specialization. Usually, however, the trouble will be in the other direction and a concern will find itself insensibly yielding to the importunities of the selling staff. If the glove-making concern that I referred to could not find a glove salesman and instead had to take a man experienced in the selling of shoes, it is quite obvious that they would teach him to sell gloves and not undertake the manufacture of shoes.

But take a closer case. Take the case of a company manufacturing syrups for soda fountains and which is located in a good tomato-growing region. It would be entirely reason-

able that they would take on a wholesale grocery salesman if they could not find a soda fountain man and it is not unreasonable that in the course of his travels this salesman would be impressed by the remarkable market for a good brand of canned tomatoes. The company could put up tomatoes as well as fruits without a very large change in equipment and if the president of the company happened to be a salesman he would probably listen with great interest to the opening for tomatoes. But here is the production side. The canning season for tomatoes coincides with that of peaches and would add to the peak of manufacturing instead of filling the valley, and also the tomatoes would require a can-filling and soldering outfit with leak test-tanks and the like which the fruit plant did not possess. The net result of engaging in tomato canning would be to increase the plant business at the very time when no increase was desired and to cause an additional investment that would have to get its wage in a short season.

There is no reason in the world why this company should not go in for vegetables as well as for fruits, but the point that I am trying to make is that it would be exceedingly uneconomical to engage on an opportunist basis. The

vegetable engagement would have to be made deliberately with the proper and planned additions to the plant so that the vegetables might be canned with the utmost economy and with the thought of fitting them into any idle floor space, shipping or receiving facilities. That is, the vegetables should not be canned simply because a salesman found that he could get orders. That is only a single cosideration.

For the modern plant should manufacture what it is best fitted to manufacture; and then sell that product. If the product is not salable the plant should be carefully revamped. No plant will long survive if it sells regardless, and its factory, like the tail of a kite, twists and squirms to the rear, its product the design of a momentary whim.

CHAPTER III

FINANCING A BUSINESS FROM THE INSIDE

Nearly every man in a manufacturing way is some time forced to reconsider his old alignment of selling and manufacture by that most forceful of all arguments—money.

In the old wasteful way of operating with frequent shuttings-down and startings-up, with some of the machinery even in the busiest times partially idle, even with low wages, money was, indeed, sufficiently important. But when wages are high and raw materials expensive, a condition which recurs every few years, the business that could carry on with a capital of $500,000 finds that it needs at least a million, and that without taking into account future production plans which, based upon the old methods, call for the investment of a further million.

Not a few men retain the ancient view of manufacturing and provide funds for extensions and for further development without a thought as to whether under a more scientific

mode of manufacture they would really need the money. There are others who hold the same views, who are firmly convinced that they need money, but who hold back either because of the high price of money or because they cannot get it at any price. The latter class is forced to consider—whether or no—those principles of manufacturing which I have outlined in the foregoing chapters; they have to find a way out.

If a man can easily get all of the money he needs, he will extend on the well-recognized financial principles by which assets are assets and business is business, which hold that if a machine is turning out one hundred of an article to-day the only way to get two hundred of those articles is to install a second machine.

It was common practise but not common sense, except in an emergency, to add greatly to equipment at the high prices of 1919. The common thought was: "I can get anything I ask for my goods. Why worry about the cost of new equipment?"

A very few men so completely lost their bearings in those days as to carry a machine which they could have bought for $5,000 in 1914 and which in 1919 cost $10,000 permanently at the larger price. There were few such men, how-

ever. But beyond the cost another factor was apparent to far-seeing men. They saw that any considerable increase in the world's productive capacity would serve to check the tendency to inflation and therefore to stabilize prices. The moment buying and selling at any old price stopped marked the commercial doom of those who did not recognize the certain balance between sales and production. The burden of useless money became crushing.

Very few concerns need as much money as they think they need and the wise man will not tie up money in such grossly high-priced bricks, mortar, and machinery unless he can charge them off almost at once. Yet without a coordination of production and sales no man can know the amount of money that he may require. He can only guess and his guess will be large. The unthinking way is to pass up the problem and seek more money; the hard, thinking way is to get more out of what you have. The more money you have in business in proportion to volume the greater are the maintenance charges and the smaller is the possibility of attaining cheap production. Money is often a deterrent to efficiency.

Let us look at money in relation to the plant. Is a plant a building or a tool? Most plants

are buildings. Indeed, I have read no end of articles on proper plant design which consider not at all the work to be done (excepting a certain distinction between heavy and light manufacturing) but dwell at length upon the architectural design. I recall one general plan in which the emphasized feature was the location of the administrative offices. According to the writer, a man of some distinction, the big thing was to locate the offices in the center and radiate the various buildings from it like the spokes of a wheel. The idea was that the administrative officers could then most easily get from place to place or could even survey operations from a central conning tower somewhat after the model prison in which the guards are grouped in a central gallery from which the cell blocks radiate. But the executive function is not to watch workmen but to see that the work goes through easily. The wheel design would involve the maximum of avoidable trucking and just because an automatic conveyor will satisfactorily transport through a considerable distance is no reason for providing that distance if by any possibility it can be avoided. It is the work, not the administration, that controls, and whenever I am called in to advise upon factory construction my first thought is the

work. I lay the work out on paper to provide a continuous stream which has its source at the receipt of the raw materials and its end with the finished product at the freight-car door. The important points are that the product must not retrace its course or move through an unnecessary inch of space. Having mapped the course of the product the next step is to plan a building to house those sequential operations. The building is but a cover—it is the case of the machine.

But, it will be objected at once, every one is not erecting a new building. Every one has not unlimited ground at hand. This does not affect the situation. We can always approach, even if we do not attain, the ideal. It is not necessary that the product should flow always in a straight line—thereby forming the consequent building into a great pipe, into one end of which you pour raw materials and out of the other end debouches the finished article. You can curve a pipe on itself without any considerable waste. If the products are small you can use any number of floors. There is always a satisfactory compromise possible provided the work controls. If you cannot do the best, try the next best; don't abandon an effort because the task appears hard.

The problem is not at all an impossible one with even an old building, for although the maximum of economy of movement may not be attained in the older building the way is open to a reasonable rearrangement which will save many times the cost of the rearranging.

The reason that the first step is to plan the work rather than the building is because in nearly every manufacturing operation there turns up that which is known as the "neck of the bottle" which is a point where the equipment is out of balance. For instance, take a company making automobile gears. A tendency arose in the trade to favor the helical as against the straight cut gears, and the sales department, following the line of least resistance, brought in a large number of orders for the helical cut. The company had more orders on its books than ever before, but it was not able to produce more than ever before because the shop had been at least partially designed for the straight cut and concentration on the helical cut threw upon certain machines more work than they could handle, while other very valuable machinery gradually fell into disuse. The machines for the preliminary work were very busy, a number of machines required in a subsequent operation were choked and threatening

to become a dam in the current of production, while other machines necessary in the making of straight cut gears were almost idle. This is the familiar "neck of the bottle" situation.

The company's planning department saw what was going to happen and they so informed the sales department. The salesmen then went out and got orders for a new kind of work to employ the idle machinery while the "neck of the bottle" was cleared by the addition of a sufficient number of new machines to coordinate their work with the work which went before it. There was a case of intelligent cooperation. In ninety-nine plants out of a hundred the machinery not required for the new orders would have been allowed to remain idle while, under the impression that perhaps the helical cut gears would soon cease, the "neck of the bottle" would have been so completely choked that the preliminary operations would have been slowed down and that concern would have lost money on its big, new business. They managed to attain the maximum profit by keeping every invested penny working and they added only that small portion of machinery necessary to maintain a balance of equipment.

In a plant making underwear, it was thought that additional machinery had to be installed

to take care of new business. The plant was turning out approximately a thousand garments a day. They were working under a piece rate scale with what they thought was a scientifically set bonus. The management had intelligently tried to grapple with their problems. They saw no way to increase production other than by adding machinery, but the machinery they needed was not only high in price but no promise of delivery could be had under six months. A considerable doubt also existed as to whether, if they did have the machinery, the additional workers could be found. A thorough study of the methods then in vogue, a rerouting of the work, and a readjustment of the wage scales brought about within two months an increase of 26%. That company looked forward to a readjustment of prices with equanimity which most certainly they could not have done had they taken wholly for granted that their previous equipment and personnel were exerting 100% of energy.

At the time these changes were made an addition of 26% to the equipment would have cost at least half as much as the whole plant did some years ago.

A certain difficulty in procuring machinery or in procuring money is to be looked upon as

a blessing, for not otherwise is made that intensive study of conditions which is so necessary.

This whole subject of finance is fundamental, but I do not care to consider it as a subject apart. I think that it may be the more intelligently comprehended if we look upon each idle portion of the plant—that is, each idle square foot, each idle machine—as a capital waste, and regard always the procuring of new capital not as the first step in an extension of facilities but as the last step, and that a new foot of space is not to be added until we are quite certain that all of the space already there is doing its full work.

A plant is a machine—a tool. If a merchant decides to buy a motor truck, almost as a matter of course he will select a truck with a mind to that which he intends to move. If he intends to do heavy trucking he will buy a four-ton truck, but if he intends to make light deliveries he will buy a one-ton truck. He should load whatever truck he buys to capacity. He should know that it costs just as much per mile if it be loaded to the guards or loaded only with a steamer-trunk. He knows that if he loads only one ton on a four-ton truck that he has not reduced the cost of operation to that of a one-ton truck. He knows that his big truck is eco-

nomical only when loaded at or near capacity; that, in effect, it is a tool rather narrowly limited in true usefulness and that to use it for small operations is equivalent to employing a sledge-hammer to drive a carpet-tack. But while it is patently ridiculous to heave a sledge-hammer at a carpet-tack, moving a small load with a big power is not so self-evidently silly and it is only latently silly to put an "A" plant on "B" work. I know a company that specializes in high-grade cooking utensils such as percolators and chafing-dishes, but which also makes a cheap line of galvanized buckets and wash-boilers. There is no reason on earth for combining these very different lines; one does not absorb the waste of the other, and in a large part they require different equipment. Another plant making cooking utensils also rolls and draws tubing which is a wholly different line and their diversion does not even possess the merit of being able to utilize the services of a single set of salesmen.

There can be no objection to one company engaging in several kinds of work. Indeed, something may be said in favor of the mobilization of purchasing power, but each of the several products should stand on its own feet and be wholly segregated in manufacturing and in

accounting. Then what we really have is a number of plants under a single ownership—we do not mix products. The great difficulty with this sort of operating is the constant invitation further to extend into the making of things for which the place is not fitted.

A plant is in like case with the truck. It is built for a purpose. It is in a way a rigid mass and only by so considering it can the utmost be gained from operation.

A plant which is nicely geared for the making of an automobile motor at the rate of, say, 400 a day at 100% capacity could without question turn to the making of aeroplane engines, turbines, or even machine tools. But it could not make even the aeroplane engines economically without a transformation from the rigidity that formed the automobile motors so nicely to another rigidity calculated to produce the aeroplane engines. To make turbines would require another series of transformations and still another would be required for the machine tools. The change from automobile to aeroplane motors is apparently a slight one and if the president of an automobile company were a salesman and his plant were not working to capacity on automobiles, he might give ear to an attractive offer to make aeroplane engines,

but unless he calculated the cost of the transformation of machinery and process to adapt the plant to aeroplane motors and also the cost of adapting it back again to automobile motors, he would probably lose money on the aircraft venture.

In the neatly balanced plant, job work is impossible. Take a machine tool plant which has been turning out standard lathes. Suppose they decide to accept a special order for lathes which are just a few inches longer than the standard. If that plant has been properly balanced for the production of the standard lathe and is operating at 100% of its efficiency, then the new order will throw the arrangements far more out of joint than any but the most far-seeing of managers will realize. In building the larger lathe there may not be any materially greater number of hours of lathe work, there may be no more than the standard drill press work, for the design may closely follow that of the standard. But the new lathes are larger and hence more planning will have to be done.

Let us, to make our point, say that the only added work required is planing. If the plant had been properly balanced for the standard then the planers would be working at their maximum. They cannot do more than that

work. The new job requires additional planing. What was 100% plant activity of the equipment as a whole on the standard design becomes 80% or 90% on the new design. The planers must have 10% or 20% more time per unit. Therefore the planers choke the progress of the work and pass on to the subsequent machines, instead of the 100% to which they are accustomed, only 80% or 90%. They are shy on work and we have an ill-balanced plant with partially idle equipment. The early operations are going through at the old 100%; they quickly flood the planers and have to slack down. The whole plant drops to the planer's capacity and thus by a very simple change in product—a change which might seem inconsequent—that plant's efficiency has been reduced by 10% or 20%. The overhead expense does not diminish; therefore instead of distributing the overhead among 100 units we distribute it among 80 or 90 units, and away flashes the profit on the new, interesting contract.

This overhead, or expense, is necessarily high when the planning is efficient. It will not uncommonly amount to 200% on the "productive" labor. As I shall in a later article demonstrate, it is rarely wise to cut down overhead although it must, of course, be closely watched

to see that it is an effective expense and not merely an expense. But generally the overhead in an efficient plant will be high and the economical way to cut it down is to distribute it over a large product. It is through such economy and not through little special jobs at a fancy price that the highest efficiency is to be achieved.

The point is to keep all of the machinery working at 100%. This is not an easy task. In some kinds of plants it is all but impossible. In making safes, notably the large manganese safes, huge boring mills have to be used and these often have to remain idle. To keep them constantly at work requires a more considerable plant capacity than other than a very large safe company can distribute. Yet the big machines are essential. A large company can so balance its plant as to keep busy even the greatest and most expensive of machines, but the small plant sometimes finds it necessary to have machines needed for certain operations without at the same time being able to provide a sufficient number of machines on preceding operations to keep the big capacity tools working. The smaller plant, thus situated, can, however, with proper planning take on special jobs of a nature entirely different from the regular work

but designed to absorb the otherwise idle machine hours. Naturally these jobs have to be arranged so as not to interfere with the regular work.

The ideal of manufacturing is first to decide exactly what you are going to make and then determine how you are going to make it—laying out each operation and each machine capacity so that an exact balance will be possible, and then charting the operations to insure the preservation of this balance. Theoretically the various parts should arrive upon the assembly floor at exactly the same time so that the assembly workers will not be delayed and so, also, that capital will not be tied up in finished parts waiting around for their complementary parts to come through. In this theoretical way of doing business the production and the sales departments decide together on what and how much is to be sold and then go ahead with the producing and the selling. Such nicety is seldom possible. One rarely starts business in quite so clean-cut a fashion. Now and again a group of men will have sufficient capital and sufficient experience thus deliberately to embark upon a commercial adventure but more commonly business is a growth in which accident plays a certain part, and it is probably

only after some years of experience that the owners learn what they can best make and therefore what they can best sell. Then it will rarely be economical for them to take a fresh start unless it be that their requirements are such that a new building in a new location is expedient.

More often one must compromise and by frequent experiment and close supervision get all of the machines and departments in balance. Take the situation of a large manufacturer of somewhat bulky machines of a special nature. The number of parts is considerable; some of them are manufactured in the plant and some are bought from the outside. The company made money but it was continually in difficulty. Customers were continually complaining of the delays in the filling of their orders. The financial department was continually complaining of the amount of money tied up in the inventory of parts, and although every one was busy the assembly floor was always cluttered with machines partly finished and awaiting the processing of some needed part. A machine might lack for completion only one small and inexpensive piece, but nevertheless it would have to hang about the floor until a special order was procured and the missing part brought

through. In the meantime the interest on the idle dollars was evaporating.

The departmental costs of production in this plant were not high. Indeed, as far as fabrication was concerned the record was something more than creditable, but what the company gained in fabricating was totally lost in a lack of coordination. We found an easy remedy. First we scheduled the number of machines to be built. We could not immediately examine into every part of the plant to determine how to keep every department at full capacity and coordinated with every other department. That was a subsequent development. The first step had to be a satisfactory filling of the orders which were then on hand or in prospect. We then analyzed a complete machine product into component parts. Some of the parts were made outside; for them we gave to the purchasing department a schedule which set out the dates when required and the amounts. The parts manufactured in the plant varied in time of making from nearly a month to a few hours. The proper time for making each was calculated by time study.

Having finally got all of these facts in hand we set the assembly date for each machine and worked back from that. If a machine were to

be assembled on the 10th of January this meant that part C2-244 would have to be put in process on December 19th, while part C-105 would not have to be started until the 8th of January, and so on through all of the parts. The results were remarkable. Within a few months production was so coordinated that all of the varied parts going into a finished machine turned up on the floor of the assembly room not on the day before or the day after that set for assembling but on the morning of the very day. Previously all of the parts of an ordered machine had been put into process at the same time and they would then gradually arrive on the assembly floor through a period of six or seven weeks.

Naturally that company required less capital. They very considerably lessened the raw material inventory, the purchased parts inventory, and the completed parts inventory. A dollar in an idle part is in like case with the dollar in idle machinery. Under the old condition not only was a large amount of money tied up in inventories, but because work went through haphazardly instead of on schedule, some departments were commonly under-active and others too busy. This was not a large company

but the mere matter of scheduling and co-ordinating added $50,000 a year to the profits. And they made an end to the continual complaints from customers about delivery.

Take another case. This company was not in a financial position to invest heavily in additions to plant or equipment to enable it most efficiently to handle a line in which it had more or less experimentally engaged. It endeavored to make the best of the situation. The engineers adapted their equipment most ingeniously and although they did not expect to attain a maximum of efficiency, they were decidedly puzzled to find that after some months of operation they had attained only 60% of the low standard they had fixed.

Here is the situation which we found. The new work was rather heavy and the lighter equipment of the shop hence was idle. Some sturdy automatic machines were being used most efficiently and to full capacity. A wage incentive was in force and this had increased production but the larger production had jammed and was ineffective. Ten heavy machines held up the even flow. These averaged 630 pieces a day and each performed four operations. The first three were turning opera-

tions and the last threading. The turning needed the heavy machines but the threading did not, and this gave us our opportunity.

The operation time on the heavy machine was 570 seconds of which the threading consumed 130 seconds. If we could withdraw the threading we should increase the machine capacity by about 30%. We found that the lighter machines could do the threading very well and in 150 seconds. The increase of 30% in the capacity of the "neck" machines brought them up to 819 pieces a day. The operators before and after this "neck" operation were easily able to increase their output to correspond. And thus by a simple study of operations and a perfectly obvious rearrangement of a small portion of the work we got a 30% increase in the capacity of the plant. If the company had made an additional investment capable of creating a 30% increase in production, the cost of the new money and the interest on it would have absorbed all of the profit they might reasonably have hoped to gain on the contract.

Truly money makes the wheels go round. But too much money clutters them. Modern business puts into plant and equipment the smallest sum possible per unit of production. Note that I say unit of production, for other-

wise the impression might be gained that I advocate a penny-wise and pound-foolish policy. Quite the reverse; it may be greater economy to spend a million dollars than ten thousand dollars, for with the larger sum the unit cost may be reduced. The point is that each expenditure is but the part of a whole and should not be made until conclusive testimony is in hand that only by spending can the additional output be had in an economical way. And the only manner in which to obtain that conclusive testimony is to so align the plant with production as to make sure that it will be a surely cutting tool.

CHAPTER IV

WHAT IS A FAIR PROFIT?

No question at all exists as to what is an unfair profit. An unfair profit is the profit which the other fellow makes. The profit which you make cannot be unfair—and you will explain exactly why it is not unfair as long as any one will listen. In fact, if you are allowed to talk long enough, you will make out a case against yourself even if none in the first place existed.

But what is a fair profit?

And who should determine the profit? Are we really talking about profit or about price? Does a high price mean a high profit, and does a low price mean a low profit? Is there any connection at all between price and profit? Does the buyer or the seller make the price, or is the price made by an outside force over which neither has any control?

An endless number of questions arise when one starts to talk about prices and profits. We get into the same morass of trouble as when we

talk of wages being high or low without reference to what is being given in return for the wages.

And usually when prices and profits are common topics of conversation we have the complications of currency inflation, and on top of that the problem of scarcity which resolves itself more or less into a discussion of what a crust of bread is worth to a millionaire who is starving.

The word "profiteer" is a glib and ready one that springs easily from the lips whenever we think we have been overcharged—or, what amounts to the same thing, cheated. Our resentment unconsciously leads us to take an entirely unbusinesslike view of the whole situation—a view which we would not ordinarily take.

If, for instance, I sell a suit of clothes to a second-hand dealer, I shall not get what the suit is worth. I hope to get more than it is worth, but expect to get less. Really I do not know what the garment is worth for resale be[illegible]cause I am without knowledge of the ma[illegible]. The man who buys from me will, on [illegible] to [illegible]lso hand, know the market, and will [illegible] fail [illegible] into me a sum greater than he ca[illegible] [illegible]erd[illegible] the man

In eras of very high prices such as followed the war both buyers and sellers are in the position of a man selling his cast-off suits to the old clothes man—no one knows what anything is worth. And that is why I say it is easy for any man to convince himself that whatever prices he charges are fair. For every man who sells also buys and his sales prices are often but a reflection of the impotence that he feels in buying. This all leads to a general looseness of thought and expression and to other shortcomings.

We are all too prone to forget that the buyer who goes away from us feeling that he has been cheated is the seed of our future bankruptcy. The man who declares that he will "get his now while the getting is good" never does "get his," for the short-sighted greed that prompts his action never knows when to stop, and the end is financial shipwreck. In pushing forward to get more, he does not see that the conditions which permitted him to make his killing have ...anged, until all at once he is brought up with
is ...rp turn and everything is taken away from
which ne...

An endle...hment shall be meted out to the
one starts to ta...ers? If we think of him as a
get into the same n...ecessarily expensive to put

him in jail: the laws of nature will take care of him. Indeed, jailing him may well be a kindness for not otherwise would he have a chance to conserve his resources!

Take the profiteer as he is luridly conceived. Let us pursue the animal. We recently had a juridical formula handed down which may be used as a description and prevent dragging in the wrong beast. A Federal judge has said that a just and reasonable retail profit must be determined on the wholesale cost of merchandise at the time of purchase and not at all upon the market value at the time of sale.

This is an interesting thought which prompts one to reflect whether a fair profit means that sellers should not make money or that buyers should secure a low price.

For instance, I might, by the exercise of foresight have bought in 1915 a stock of some commodity in Japan and have been unable until 1920 to get it across the ocean on account of the shipping regulations. Let us say that the goods stand me ten dollars a unit in my American warehouse. The man across the street buys [illegible] stock in 1920; it stands him thirty do[illegible] [illegible]lso unit, and he offers it at retail at fif[illegible] into If I offer mine at forty, I am [illegible] the man even though the public pays [illegible]tion of sell-

have had I not had foresight. On the other hand, if I sell my stock at retail at thirty, I am accused of cutting business from under the feet of my competitor and also I realize so little money that when the old stock is exhausted I shall not, in spite of my profit, have money enough to replenish at the then market price.

If I follow the logical sequence of the rule as laid down, my only course, if I am condemned with a forehanded disposition, is not to make a price, but, on the contrary, send all of my stock to auction and let the public make its own price.

Or again, suppose that I have a badly chosen stock that will not move as a whole. A sudden demand arises for some article which I happen to have had in stock for a long time but which had practically gone off the market. I sell out that one article at a profit of one thousand per cent, but the profit on that single article is not enough to meet the going expenses of my shop and I am forced into bankruptcy. Can I be both a profiteer and a bankrupt?

Or turn to manufacturing. If I have a well-...ed plant and planned production, I can ...rn out goods at a lower cost than a ...ho has an ill-managed plant and ... planning could scarcely be

dignified by that name. If I sell at his price then I am a profiteer. If I sell on costs at a low profit in order to get the trade, shortly I shall be so large that I shall be charged with unfair competition and price-cutting. We have laws to prevent manufacturers sending goods to our shores on almost that identical basis.

Or leave the question of profit per sale and take the year's profit on invested capital. I may keep my capital working through every day of the year and by frequent turnovers at a low profit per turnover make a very high profit on my invested capital. I shall have performed a high public service, but, according to the governmental notions of business, I shall be a profiteer. I could purge myself of the accusation of impurity only by chucking my knowledge of business out of the window and raising my prices sufficiently to slacken the turnover, and, although making a larger profit per sale, make less on my invested capital.

Or I might increase my capital. Of course I shall, against my will, have to charge the public more for my goods. This is not only business but also social lunacy. But unless I try to ...so like a lunatic I am apt to be put into jail ... into ness the case of the Brooklyn haberd... the man was arrested as a profiteer by ag... ...otion of sell-

partment of Justice because he made, including his salary, a profit of 19% on sales, which happened to be 60% upon his invested capital. That poor fellow committed suicide in his disgrace.

"But," some one will immediately ask, "would you take the lid off profits and let every man charge exactly what he chooses? How then could you curb the greedy? Would not the public then be at the mercy of the profiteers? Should we not be paying $75 a pair for shoes and $5 for a pound of beefsteak?"

And there unfolds a dreadful picture of a world peopled by only two classes—profiteers and their victims. Here again we have a delightful assumption growing out of loose thinking. In discussions of capital and labor you would imagine that only the laborer worked and never had any work done for him, and that likewise the owner of capital only buys services and never has his own for sale. This is nonsense.

There are no such abstract entities. This is world of human beings, and it is impossible wme to conceive of a shoe-dealer whose sole Aty in life consists in selling shoes for many one start every one else thinks he should sell get into their that shoe-dealer, in spite of his

bad disposition, cannot get on without buying food, clothing and shelter. Even landlords require food and clothing. And this brings us to the extraordinary belief, which now seems to prevail, that if a dealer refuses to sell his shoes for less than $75 a pair, or the butcher refuses to sell his beefsteaks at less than $5 a pound, there is somewhere some compulsion on the part of the buyer to buy at that price.

Situations can be imagined in which one might have to buy a few commodities at any price in order to preserve life. But such situations are rare. They have no more to do with business than has the salvage of a ship at sea to do with the ordinary routine of the merchant marine. And furthermore it is presupposed that in this dire emergency the buyer has the money with which to pay the so-called exorbitant price.

The talk about fair and unfair prices is quite beside the real point. It is not at all necessary to surround the matter of prices with a mist of sentiment. The charging of extraordinarily high prices may or may not be immoral. That, too, is beside the point. Low prices may also be immoral. And if we lug philanthropy into business, what are we going to do with the man who gets perfectly hipped on the notion of sell-

ing things cheaply to the public, and in his ardor forgets to pay his probably less emotional creditors? Is he an idealist or a crook?

But are we to admit impotence in regulating profits? Shall we allow human greed to run amuck? Running amuck is not a diversion that can long be sustained. Usually one hits a stone wall or otherwise demonstrates the physical phenomenon that two solid bodies cannot occupy precisely the same space at the same time.

Let us go back to our shoe-dealer. Fifty years ago most workmen went barefooted in summer because shoes were considered too expensive to be worn heedlessly. There is abundant evidence to sustain the conclusion that feet were made primarily to stand on rather than to give aid and comfort to shoe-makers. But to-day very few people think of going barefooted at any time of the year. We have grown into the habit of wearing shoes and most people have several pairs. We took up the shoe-wearing habit not because our feet had changed, but because shoes became cheaper. Now, if shoes are held at such a price that the ordinary person cannot buy a pair then he will go barefooted, and although at first going barefooted may roughly use the tender foot, the makers of

shoes will suffer more than the owners of feet.

We can discuss the morality of prices, and we can shed long, salt tears as we pay our bills, and, if we possess sufficient imagination, we can carry on our sorrow into the process of passing the additional cost on to those to whom we sell, but really are we getting anywhere with all of this self-deception about prices? Is it not better to recognize right off that good business is founded upon enlightened selfishness and go forward on that principle?

It is not at all necessary to introduce the moral issue into business. A successful business man must have character; he must also meet his financial engagements. Or put it in another way: a business man cannot be successful unless he has character. But any attempt to fix profits or wages or any workings of business on the basis that human beings shall not be selfish is simply bound to fail.

It is the fashion in these days to predicate reforms upon bringing about a quick change in human nature. It would seem to the writer to be better to identify service to the public with self-interest, then those who are amused by being self-righteous may take their diversion on the side and not interfere with the orderly conduct of human affairs.

We are witnessing to-day the large changes which the introduction of labor-saving machinery has made in the conduct of industry, especially in the direction of making prohibitive the cost of an idle plant. But a plant will not be idle if its product is put within the reach of almost everybody. The wants of man are infinite. It is up to the man who desires to supply some of those wants to put his articles on the market at such a price that they may be bought in ever-increasing quantities by a constantly growing number of people. That is the best way to serve humanity, but it also happens to be the way to make the largest profit—a particularly fortunate provision of nature, since if in best serving the public one also best serves oneself, one will not become tired of serving the public.

From the owner's standpoint, it is not the percentage of profit per sale that counts, but the annual profit, and it is growing increasingly evident that the business which has a large annual profit on a comparatively small number of sales or turnovers of capital at a large margin per sale is not nearly so stable as the business which gains a large annual profit by a great number of turnovers at a small profit per turn.

It is always the first thought of monopoly that it will gain the largest profit, first, by shutting out all competitors, second, by charging the largest possible price the public will pay. But, strange to say, every business in this country that has attempted a monopoly has found its largest success after it has abandoned all notion of capturing the market other than by giving a large service at a low price. A monopoly founded on service is a legitimate monopoly.

Take the automobile trade. Under the Selden Patents, it was thought that, by a system of licensing, the number of people permitted to make automobiles would be restricted, and all danger of glutting the market be removed. But the great progress in the automobile industry has been since that patent expired. To-day it never occurs to the owners of an automobile factory to try to monopolize the market. What they try to do is to turn out a good car at a fair margin of profit. All the combinations of companies in the industry, and there are several such, are successful only in the degree that they tend to increase production and at the same time decrease prices.

An attempt at monopoly usually brings in competitors who evolve substitutes that take

the place of the monopolized article. An interesting illustration of this was lately given by the manufacturers of an automobile horn. In the beginning they thought they were protected by patents and charged a high price for their product with the idea that they had the market at their mercy. Other men saw the possibilities, were attracted by the field, attacked the patents and broke them. The company which devoted so much of its energy to forming a monopoly has now a heartbreakingly low profit on its capital. Dozens of similar instances will occur to you.

A fair profit, then, to go back to that term, is not a figure which may be settled by any outside authority, and it has nothing at all to do with invested capital. It is fair that a premium should go to the man who can so turn capital as to make the largest possible percentage upon it. The whole trend of scientific business is to make capital small in proportion to sales, and then to make capital move rapidly. The capital may have to be large—for the best business is done with the best facilities, and these cost money—but, consistent with the sales, the capital should be as small as possible.

The profit upon capital as evidenced, say, by dividends, is a matter of circumstances. In a

growing business with large profits it may be unwise to declare any dividend at all and wise to put all the earnings back into future equipment; or it may be good policy to establish reserves against a fall in prices or hard times, and thus by bookkeeping, take away any profit on capital. Profit on capital is never to be reckoned as the whole sum left after subtracting outgo from income. This would jeopardize capital for the sake of profit—which is hardly business. Profit is money that can be safely taken out of the business—it is not a surplus to be gained only by liquidation.

The moment we attempt to limit the amount which may be earned by the capital invested in business, we put a premium upon waste and inefficiency and tend to lessen the production of goods.

Whether we try to fix a price or a profit, the result is the same. Take the fixing of prices. If the constituted authorities fix a price to be based upon the average cost of production, the consumer will have to pay too much and a premium will be put upon inefficient manufacturing and selling. If the price is fixed on the basis of the most efficient production, those who are least efficient will be forced to go out of business, the market will become short of that

particular commodity, and it will not be obtainable at the government price. That is what always happens when prices are fixed too low.

Suppose a fair and equitable price could be fixed. That price could be maintained on a fair basis only by fixing the price of every factor which entered into the fixed price, and these in their ramifications would include the price of nearly every article used by humanity. That is not all. A necessary corollary to price-fixing is the fixing of demand. The next step is rationing and the next communism. For when you say that an article must be sold at a certain price and ordain that each individual may buy only a certain amount of that article, and by necessity extend that process to all articles, you have communism in fact if not in name, for the State and not the individual will then be controlling consumption, distribution and expenditure.

But if we cannot fix a price, can we not fix a profit?

It is very easy to talk about fixing profits, and, at first glance, it seems quite logical to regulate profits in manufacturing on a basis whereby the money invested in an enterprise can be considered and the profit held down to an agreed percentage. This is the method fa-

vored by the law-makers chiefly because it is the mode of first impression and requires no knowledge of business for its application.

But fixing profits is infinitely more viciously destructive of economic life than fixing prices. Price-fixing leads through the socialistic state into the communistic state. Profit-fixing leads to chaos.

It would seem that the experiences during the war should provide a lesson for those who unthinkingly talk of fixing profits. You can fix profits only by a broad extension of the cost-plus system, or by an excess profits tax, or, if you want to make absolutely certain of confusion, you can combine both methods as they were combined during the war. Or there may be some who would also advocate profit regulation on the basis of invested capital.

Take the three methods. The cost-plus system does not lower prices to the community, which is presumably the end sought. On the contrary, it raises these prices, because the less efficient the manufacturer the more money he will make. The excess profits tax, by which it was ingenuously thought that a man who made too high a profit would be required to turn the excess back into the coffers of the State, also helps prices to soar, because the man who finds

himself making so large a profit as to incur a heavy tax will wastefully increase his cost of doing business. It is not human nature cheerfully to turn over a large part of what one earns to some one else, and extravagance tends always to limit production.

The third method—that by which profits are limited according to capital invested—is again a deterrent to production, penalizing as it does the most vigorous use of capital by encouraging waste of capital. The regulation of prices or profits does not result in lower prices. On the contrary, it restricts production and raises prices.

You cannot animate by law: you can only restrain. And every restraint lessens and limits production.

The only possible method by which lower prices can be achieved is a method which stimulates production—that which gives more to distribute. The more you have to distribute, the lower will be the price. If some form of tax could be devised which would be practically confiscatory to the man who is inefficient in business, then we should stimulate production and thus lower prices. But that is a thought which has not as yet been developed.

Most of those who talk at length on the sub-

ject of profits are not and never have been in business. They are as a rule wholly unacquainted with natural laws as opposed to man-made laws. They do not understand what capital is or how and why it functions. The result is that this whole matter of prices is approached as if it were almost a phase of criminality—as if the making of profits were a habit that must be stamped out, or at least given institutional treatment.

We do not as yet, however, hail as wholly virtuous the man who does not know how to make a profit. No distinguished service medals have to my knowledge been struck off and awarded exclusively to bankrupts. The fact is, if a man is incapable of making a profit, he cannot remain in business. If the State forbids him to and prevents him from making profits, it will drive him into bankruptcy.

People are, at times, apt to go astray on this whole matter of profits and prices because they forget the yesterday when the producer was beseeching the consumer to buy. Checking their memories they come to think that prices, and consequently profits, are exclusively fixed by the seller—that the buyer is in the way of being a patient under ether with the seller as a surgeon who will operate as fancy leads.

The seller does not fix the prices. The buyer is ordinarily the ultimate price-fixer. Day-to-day demand as compared with supply is the arbiter. But the demand is not an urge that is clamorously insistent and ceaseless until satisfied. The demand is rarely one of necessity: more likely it is one of habit which we translate into necessity. And habits are as liable to change as the profits they make possible are bound to fluctuate.

Once, we had to have linen paper; to-day we have to have wood pulp paper; to-morrow it will be some other kind of paper that we need. The point is that the moment any so-called necessity is so restricted in distribution, either by lack of quantity or height of price that it cannot be bought by even a small fraction of the people who formerly used it, then the necessity for that commodity disappears.

In the new order of business there is, however, a method by which the seller may to a degree fix the price. This he can do by so planning his schedules of production that his price —and in price it is necessary to consider quality, for that forms a part of price—is always under that of the market made by the inefficient, the general market. In the new order of business, the manufacturer will fix his prices upon

costs; with planned production, the seller will not have to sit around waiting for a demand or crying because a demand has dwindled or changed. He will drive steadily through the market and create a demand which efficient, planned production will enable him to fill.

When the demand exceeds the supply it is difficult to take this longer view of business. But this is fact—sellers' markets cannot exist without buyers.

Buyers are hardly perennials—not evergreens. Whenever something else is found to take the place of a necessity, that necessity never comes back on the market again as a necessity. We gain production by the dictates of stern necessity and not otherwise.

The man who takes the long view in business will not particularly bother his head about fair prices and fair profits, but will so endeavor to plan his affairs and his production that what he believes to be a necessity will, by his ready supply of it, continue to be a necessity. The buyer is concerned only with getting a price at which he can make money. That is, a fair price, and it is the only price. The seller's profit at that price is his own affair. If he understands his business he can constantly reduce prices and increase annual profits.

CHAPTER V

CASHING IN ON THE PLANT YOU HAVE

EVERY once in a while some one sends out a questionnaire to a number of presumably representative members of a trade inquiring as to their costs of doing business, and always some extraordinary figures result. In one typical industry, comprising 120 manufacturers, I found a difference of 50% between the high and the low cost men—and this was after assuming a uniform price for the raw material and a standard weight! In other industries the differences are even greater. Unless you take the results of such an inquiry merely as a starting point from which to begin an investigation of what it really does cost to make an article, the figures are not more valuable than would be a collation of opinions concerning the age of Ann.

When a man says to you (and in any discussion of costs, or prices, or wages, or profits, he will eventually make some such declaration): "This article cost me $3 to make. How am I going to lower the price?—How am I going to

pay higher wages?—I am not making any money as it is!—Theories are all right, but these are facts!—Now what are you going to do about it?"

The man will probably be right—according to his lights. He thinks that it costs him $3 to make the article. But what he thinks it costs and what it does cost may be very different figures. Costs form a basis for reflection, but are not to be arrived at by pure reason. What he has charged to that article according to the usual costing mode are the interest upon all of the mistakes of his predecessors, the money that his credit department should have but did not collect, the errors of his sales force, and so on through a long list of wastes until probably if you analyze his costs you will find his $3 cost in detail exhibits itself not as a roster of the material and labor that actually went into the product, but as a catalogue of waste.

For instance, you will probably find a percentage on the investment upon the delightful assumption that "money is worth 5% or 6% anyhow," when it must be perfectly obvious that money is worth only what it earns—which may be nothing or 100%. And it is the usual practise, from which, as accountants, we are unable to depart for the time being, to charge

mortgage interest or other so-called fixed charges into the product.

This is an accepted practise, but it is not logical beyond the point of charging to the article what amounts to the wage of the machinery, power, and housing necessary to produce it. This wage is often stretched under the guise of an investment item to contain the wages of an immense amount of machinery, power, and floor space that have nothing at all to do with the making of the article—indeed, some of the machinery may be but grim monuments of the past. And after you have delved into the investment side of the cost, you will have to go on further to inquire as to how much of the labor charge went into the article and how much into studied leisure, or, doubtless healthful but industrially unnecessary pedestrianism.

Samuel Johnson, it will be remembered, while passing through a street could not resist touching various poles and lamp-posts that lined his route. He zigzagged to and fro and it must have taken him quite a long time to go through a modest wood-lot. His habit strikes one as absurd, and yet many, perhaps even the majority, of industrial plants are organized on the Johnsonian principle and they charge into their

product not only the postal peregrinations but also the cost of the posts!

We can say that it costs so many dollars to make a steel wrench and we can let it go at that, but the sensible follow-up question is, What sort of tools were used in making that wrench; was it cast in a square block, cut out with a hand chisel and then filed and ground down to shape? Or was it drop-forged? Did the maker turn out a single wrench or a million? In other words, what equipment and experience did he bring to the task?

That inquiry is at the basis of every cost figure. It is absurd for any one to announce *ex cathedra* that it costs so many cents to move a ton a mile, that it costs a fixed amount to mine a ton of coal, or that it costs a definite sum to manufacture any article, for, unless we propose that the business intellect stand still, a costing price is never to be considered as a finality but merely as a figure on which one starts to bear down after an examination of all of the surrounding circumstances.

The industries which claim to have fixed costs, such as mining and transportation, are our more backward brethren with whom traditional practise is more highly esteemed than progress. Various outside forces including

governmental regulation have tended to crystallize these industries by imposing on them standards gained by averaging mediocrity and ability—that is, they have had applied to them the old trades-union rule of wage measurement and thus have successfully killed initiative.

Unless costs are considered as *agents provocateurs* to stir up trouble and uncover wastes they might as well not be taken, for otherwise they are merely dull historical records with a possible museum value. We keep costs first to find out what we are doing and then to discover how to do it better. If we stop at finding out what we are doing then our record is not of much value. How much it costs to chip a casting with a cold-chisel is useful information only when we compare it with the cost of doing the same operation with a modern planer.

In this book I am pointing the way by which the manufacturer may perform the highest public service. This I have defined in unmoral terms by saying that this service has as its components low prices to the public and high profits to the manufacturer—which are not opposed but inevitably complementary factors.

That which usually prevents the attainment of this wholly practical objective is the waste in carrying through the operations of manufactur-

ing and selling. A very considerable part of this waste gets down to the arrangement and use of the plant.

We have learned a little about plant arrangement; we have learned that a straight line is the shortest distance between two points. Now we are beginning to learn something about the use that we make of the arrangements.

The progress of advertising and selling was beginning to focus attention on plant use before the war. The right sort of advertising and the right sort of selling create demand—that is, they uncover in the individual a need which he did not previously know that he had. We used to think that creating a demand was all there was to business and that a stack of unfilled orders was a sign of good management. We now know otherwise; we know that an organization out of balance is not more useful than an automobile which has one very fine wheel which happens to be a different size from the other three. This odd wheel may be a perfect thing to look at, but the motor-car will not run as well as it would with a much poorer wheel but one of the right size.

A business has to be in exact balance. The advertising and selling must not only sell to the capacity of the factory but to the capacity

founded upon the article which the factory can make with the highest efficiency.

Both selling and advertising have reached such a high point of development that the old methods of manufacturing are no longer suited to them. In the old days before advertising, a member of the firm dropped his work in the office, went out and sold something which the customer said he wanted, then came back and had the shop make it. That, to a great extent, is still the method of foreign salesmanship and manufacturing. They do not aim to create demands so much as to supply demands already in existence, which is one of the reasons that American goods have, generally speaking, such a small measure of success in foreign markets. But as salesmanship developed and advertising was added to it the process of creating a demand began—although, I think, unconsciously. We now know that a demand is not something that a person is born with but is purely a matter of education and environment. For instance, the average household abroad considers a central heating-plant as being in the way of a luxury. Here a very considerable portion of the population considers it an absolute necessity. Electric lighting and the telephone are in like case. If you run through the list of most

of the things that you use during the day you will discover that you buy them as a matter of course, and though you may not have been consciously brought into that habit through advertising and selling, yet as a matter of fact you have been. These demands increase with each newly educated generation.

Take soap. Long ago people made their own soap at home. Later small soap-makers sprang up supplying neighborhood trade. Then came larger soap-manufacturers with special soaps and to-day very few housewives know how to make soap, while the making of soap is a very important "essential" industry. Further than that, where the home of a hundred years ago had and knew only one kind of soap, even the poor of to-day will have several kinds of soap in the house for various purposes. One no longer simply buys soap; one buys a particular brand for a particular purpose. A soap-maker can turn out a hundred different kinds if he chooses, but the big successes in soap manufacture have been attained by concentrating upon a single brand and pushing that to the utmost.

The very force of salesmanship has compelled a concentration and a specialization that are not yet fully realized. A striking success in any one line fortunately brings in com-

petitors who sell, if short-sighted, purely on a price basis against the manufacturer who was first in the field, but who, if far-sighted, sells on both price and quality. And the manufacturer first in the field has then to take stock of himself to see if he is getting out the best product he can and at the lowest possible price. Price alone is never a sales argument; price is not to be thought of merely as first cost.

Price and quality, considered together, form the real manufacturing problem. You can put cheap materials and cheap labor through ill-suited machinery, turn out a poor product, and sell it at a low price. There is no permanency in that sort of business. The real business comes from putting the very best materials through exactly fitted machinery managed by skilful labor so that an absolutely first-class article will go through at a minimum cost. Then only can you sell a good thing at a low price, make a fair profit, and establish a solid trade.

In this high development the plant becomes a tool and the sales force that once just went out and sold has to sell to what that tool can make. When you have acquired that tool you will know how to fix costs. You will not be up against the usual costing problem of finding out

how much time and money it takes to file down a thousand castings. You will have a machine that will do that work. This machine will not merely be a machine; it will be a tool for that particular job. If a workman has a thousand pieces to gage he will do them more quickly with a fixed gage than with a variable one, and it is exactly the same with the plant and every portion of it.

For a time, under the influence of eloquent welfare workers, we began to think that a plant was a place where the workers might be happy at their work; a few enthusiasts seemed to think that the perfect productive ideal had been reached when the band played merrily, the workers sang at their tasks, and all present had a pleasant time. Of course the workers ought to be happy, and the recreational side of any manufacturing institution is highly important, but the primary objective of a plant is to turn out goods and not to promote choral societies. A man will get more real joy out of an arrangement of machinery that enables him to double his wages without additional effort and which permits him to exercise a certain workmanship than he will out of any scheme which seeks to combine relaxation and work on the theory that there is no fun in work. We do not realize that

providing an amusement for the worker at his task is a confession of an inability to make the task of itself interesting and rests on exactly the same theory as the ancients held when they provided a slave to chant a rhythm for his fellows at the galleys.

The southern cotton-mills that employ negroes find they work hardest while singing. This is explainable. The negroes have no interest whatsoever in their work. A negro will tend a knitting-machine for ten years without having aroused in him even a faint curiosity as to why the machine knits. The machine is to him a harmless sort of a devil with a strange penchant for knitting. Being constitutionally tired he becomes intensely so when looking at the machine. He gets interested in the singing and develops an exuberance which has to find a vent in a quicker movement of the hand—he dances to the machine the way people chew to music in a restaurant.

As we make manufacturing more mechanically perfect and subdivide operations we can with prevision make them constantly more interesting. The kind of plant I am talking about in which all of the operations are repetitive and in which waste is at a minimum is more truly humanitarian than that which sets itself up

first as a human institution and only secondarily as a unit of production, for true freedom in this world is attained through work. The coordination of plant and product makes for the greatest liberty.

A couple of Turkish hamals can together carry a piano, but I doubt if they find much joy in their work. A motor-truck can carry half a dozen pianos and the chauffeur has a man's job. He is paid more money than a dozen hamals. They can barely exist on their earnings, while the chauffeur has a comparatively full life. At the same time it costs less to deliver the pianos by gasoline-power than by man-power. That chauffeur may merely be the attendant of his machine; it may be his master and he may churlishly and listlessly operate it complaining that he is a slave and that there is no joy in his life, and he will probably go right on complaining until, while contemplating his woes, he pitches the machine over a bank and breaks his neck. Or again he may make himself master of that motor and have all the fun of directing a great piece of machinery. The progression from hand to machine-labor can always be a progression in intelligence. It need never be a retrogression. There is no progress in wasted human effort.

Delivering pianos on man-back is a gross example of industrial waste. But many of our manufacturing plants arrange for wastes that are as great—if not so obvious.

Look at a few instances in the "hamal" class. In a salt works 50-pound bags of salt went through these operations: First, a man held a bag under a spout until it was filled with salt. He lifted that 50 pounds to a truck. Another man wheeled the truck to a scale. A third man lifted the bag to the scale and corrected the weight. A fourth man lifted the bag from the scale to a sewing-machine four feet away, sewed the top, and lifted the bag to another truck. Here we have four men ostensibly engaged in bagging salt but mainly occupied in juggling a 50-pound sack. A not very complicated machine could fill those bags, weigh them, stitch them, and deliver them to a conveyor which would take them to the store or shipping-room. The owner of that plant could truly say that he could not afford to pay those men much—for weight-lifting is not a lucrative profession. But he could easily afford to pay one man tending that machine a good wage and the other three men could be released into some form of productive industry. It does not make

for the freedom of man to engage him in uselessly raising and lowering a bag of salt.

That factory abounded in other wastes; whenever they did use a machine, they managed to put that machine in such a place that the unnecessary trucking and handling fully balanced any advantage gained by the use of the machine. In another factory we discovered that in the process of final assembly which required 14 consecutive operations, 43% of the men's time was taken in handling and carrying. There the solution proved to be an apron-conveyor table; 17 of the squad of 51 men were released, production went up 12%, and the company saved $18,000 a year on assembly alone.

The storage of metal-parts was baffling another corporation; they felt that they had to put up a building for storage. Now you can nearly always find new and economical storage methods. We did so here. We found that in one section of the store-room out of 318 "tote" boxes only 134 were full; the others varied from one-quarter to three-quarters full. They actually needed only 234 boxes. The boxes they had were of heavy wood. We found that 20% of the floor-space was taken up by the wood of the boxes. The purchase of sheet-steel boxes

of smaller size gave that company all the storage space they needed without putting up an additional building. A new building would have been waste—yet in nine cases out of ten it would have gone up if the funds had been in hand.

In another plant the boxes used to carry parts to the machines were too large for one man to move; consequently the operators at the machines shoveled the parts into smaller boxes which they could more easily manage. We found that this quite useless reboxing took away from 26% to 34% of what should have been the productive time of the operators.

In a punching operation in this same shop we discovered that the worker took five minutes to find a small box to carry the parts he needed and then four minutes more to transfer the parts from a big box into the little one. The actual punching time for the lot was twenty-one minutes, so that the preliminary waste represented a loss of 40% of the operator's time. We adopted a small standard metal box which could be handled by one man even when filled with the heaviest parts; all the boxes were alike, hence he could take the rough parts from one box and drop them into another right at hand, and the boxes could be kept at hand because their

tapering sides allowed them to be stacked in nests.

These boxes fitted the store-room shelves so that the parts could be stored without reboxing, and the boxes being all of one size an approximate count of the pieces could be had merely by counting the boxes. Here, adopting a standard box at a slight expense saved one-third of the time of the men. In other plants I have seen savings that vary from 15% to 50% of the productive time made by providing the proper sort of "tote" boxes.

Or take another equally simple expedient: in a shop making iron gratings the molders filed past the cupola, received in turn a pot of molten iron, and returned to ladle the iron into the molds. All the men could not, of course, have their working-spots at the same distance from the cupola, some naturally had to travel further than the others, and since there were sixty molders in the room often five or more were lined up waiting their turn at the cupola. The solution was to group the men and run pots of metal out on a monorail to the various groups.

These seem to be trivial instances; they are trivial in the sense that they were corrected almost by gestures, but they illustrate that it is not always the great drastic changes which go

far toward getting the utmost out of a plant. In these days an owner will commonly see the need for good machinery; usually he will overestimate that need and put in more stuff than he actually needs. But what he does not often see is that the very best machinery loses a fair part of its value if it is not kept running continuously—and that it is conspicuous waste to put twenty thousand dollars into an improved mechanism and then have the operator waste one-half of his time and the time of the machine in trivial by-tasks.

In order to get just the right plant in every respect it is by no means always necessary to erect a new building. Unless the structures in use are dangerously weak or are so ill-assorted that nothing much can be done with them, it is commonly better to make the most of what you have than to let yourself in for a great building project. And no building should be undertaken unless finances can be provided so that exactly the right building may be put up. I recall a building in which the owner made a change in design in order to save $10,000; since then he has been spending $3,000 a year for useless trucking that would not have been required had the right building been put up in the first place.

That man had better have awaited the time when sufficient funds were at hand.

The big thing is to cash in on the plant that you have, and this often involves only a re-arrangement and a slight addition or revamping of present equipment with a drastic going-over of the product sold and the methods of the manufacturing and sales force.

Sometimes a small change in design will accomplish much; we saved a third of the cost of one operation by shifting the position of certain holes that had to be bored in the pieces—no real reason existed for having them in the inconvenient spots that time had honored. Or again the saving may be had with a gang re-arrangement without a change in the layout, as in a warehouse store-room where we found that a better rating of the men and an allotment of task and bonus spurred on 19 men to do with ease the work that 33 men had found trouble in doing before. In a machine-shop the production of a planer was increased 216% by putting unworked and completed parts where they would be out of the way of the operator, by shifting the planer away from a trucking track which it was overhanging and by paying the operator a small bonus. In a tableware fac-

tory, plating the product took up about one-fourth of the payroll; this work was so slowly done that the management thought of putting in automatic cleaning and plating tanks; it was found, however, that these would require for attendance about as many men as before. Instead, we rearranged the work, put in a wage incentive, and not only saved the $15,000 that would have gone into new machinery, but took the men to a point some 20% above what the machinery could have done. There machinery would have been a waste.

One might go on endlessly with these smaller reforms and then branch out into what can be accomplished when the plant is exactly fitted for the work—when you know in advance exactly what you want and then build a roof over the planned work.

But the point that I want to make is that the highest and most profitable efficiency is attained not by scattering but by concentrating on a single product, and then it is up to the management to see that they cash in on the tool or arrangement that they have devised. This rigidity of plant will in time become so marked that the executives will no more think of taking on a dissimilar line to keep the plant going than the manager of a foundry would think of ac-

cepting a large order for fancy sewing. If the salesmen find that they can dispose of a new line, or experience gained by investigations, observation or advertising reveals profitable side-lines, then the question to be decided will be whether these new articles had not best be manufactured in a separate plant.

When Beechnut went into the making of ginger ale, the manufacturers built a new plant for the ginger ale; Ford did not attempt to make tractors in his automobile plant—he built a new plant. The modern plant, producing at a high rate and low cost, cannot and should not do odd jobs; it is a fixed instrument designed for a fixed and definite purpose and it can be readjusted and diverted to foreign purposes only with difficulty and needless expense.

But at once comes the objection that the work may be seasonal and that the one-object plant will have to remain idle during the dull seasons. This I do not at all grant. Usually the seasonal product can be made an all-the-year-round one, but if this cannot well be, then a new and supplementary line can be taken on, always giving first regard to plant adaptability. A manufacturer of fly-screens found that he could in the off-season make a line of billiard tables and game-boards that could be made on nearly

the same machinery as the screens. A maker of mechanical toys who found that his trade could not be sustained except for the holidays, branched out into small electric motors; this was not a wise choice from the plant standpoint, for the demand for motors proved to be year-round and so large that he has had to put up a new factory for the toys and is again looking about for a complementary product.

Thus we find that selling is not one department, and making another. The two have to work in the very closest inter-relation and harmony if that good business is to be developed which is expressed in service to the public and which consists of low prices and high profits with correspondingly high wages. There is no other way. The new selling and the new advertising sell the product of a tool and not simply a product.

CHAPTER VI

FALLACIES OF MANAGEMENT

BERNARD SHAW once described a high starched collar as a bit of "cloth filled with stiff white mud," and not long since in an English newspaper appeared the following affecting item: "Falling down in a fit, Major Gerald Pilcher, of Ebury Street, Pimlico, was suffocated by the stiff high collar which he wore."

Sometimes industrial organizations button themselves into such high, stiff, starched white chokers of rigid policy that if they happen to fall into any one of the several kinds of fits that an industrial organization may fall into, they pitifully suffocate. The most frequent fits are those which arise from what is known as "labor trouble"—that is, from a failure to appreciate the place of the human element in industry.

It ought to be evident that an industrial plant is only an inconveniently sorted mass of junk unless some one is around to see that the bricks, mortar and machinery become tools of produc-

tion. Up to date we have not been able to erect anything in the way of a gentle and obedient Frankenstein monster that, quite untended, will rattle its fabricated bones for the benefit of the fabricator.

To put the matter more concretely, an industrial adventure needs the services of human beings. Or, looking at it from another angle, an industrial organization exists only because it serves—not that it may serve—human beings; in order to perform that service it requires certain services from all classes of human beings.

A lack of recognition of the fact that really we are all engaged in service, however much some of us at times would like to think we are principally engaged in being served, is back of a good deal of the misconception of the relation of the human element in business. When we speak of the human element we are apt to think only of the men who work for wages, and of their pay. This gets us into trouble right at the outset, for although executives and managing directors do not commonly strike and march around the place bearing placards, they are just as human and just as much a part of the problem of the human element in industry as are those men who work strictly for wages.

And in the same degree, the consumer of merchandise—employers of a sort—have a vital industrial function to perform.

Executive incapacity or disability is responsible for a larger share of industrial disquietude than most of us realize. Something akin to the "divine right of kings" has surrounded the managerial gentry with a "don't touch me" halo. That they are no more immune from criticism or exempt from responsibility than any workman in the ranks, seldom occurs to us.

When the wage earners are chronically sullen and dissatisfied you will nearly always discover that the executives do not know their jobs any too well. When an army fails, the general is cashiered. The blame is not put upon the men in the ranks and although the analogy is by no means perfect and the man at the bench is not wholly comparable to the private in the ranks, yet the matter of leadership is quite as important in an industrial as in a military army. It is easier to pass the buck to the men in the shop, to the unions, to radical agitation, or to any of the familiar causes than squarely to face the fact that what we commonly know as a labor problem is often only a management problem and that the selection of capable

managers will go far toward insuring a large measure of cooperation with the wage workers.

A great many people have lost their bearings on labor and on the conduct and business of men generally. They seem to think that "wrinkles" will bat for common sense. When J. P. Morgan was looking around for a man to head the steel corporation he rather bitterly remarked to the general effect that to find a man with the executive ability for the place was nothing compared to the difficulty of finding a man who would not give up too much of his time to spending the salary that went with the place. Right there he touched upon one difficulty which is common to all grades of employees whether they be presidents or coal heavers.

The president, whenever he is receiving a sufficiently large salary, as a rule, likes to set up as something in the way of a merchant prince with the emphasis on the "prince." His regal duties frequently leave him so little time for his job as president that he is brought to complain that the organization of modern industry necessarily takes the chief executive far away from the actual worker. It is not the organization of industry but the organization of the executive that takes him away. This thought will

inevitably spread throughout the whole organization, and whereas the president may be big enough to be both a merchant and a prince at the same time, it is perfectly certain that most of the understrappers will not. There is no spectacle more likely to madden the employer than that of a young man receiving $15,000 or $20,000 a year and who is feeling his oats instead of looking after his job.

An organization takes its tone from the head. If the chief executive considers the shop principally as a starting point from which to go somewhere, the other executives will have the same attitude and put it into practise on every possible occasion, and going down the line you will find that the man in the shop is perfectly cognizant of the attitude of his superiors in authority and that he has similar if not the same temptations and desires. Because he cannot gratify them he is very apt to talk about "absentee ownership," or as he may less elegantly put it, "working for that guy down at Palm Beach."

A man is more or less entitled to do what he likes with his money, and there is a tendency on the part of our longer-headed leaders of industry, whenever they think they can use their time to better personal advantage away from, rather

than in the place where the money comes from, and at the same time do not care to retire entirely from management, to create offices for themselves without duties and put in charge men who will stay on the job—men who are empowered with full authority concerning everything except the broader financial decisions. These absentee-executives, in other words, delegate to the man on the spot the management of the human element.

It is the opinion of all the bigger men of to-day that the point to be considered in appointing a man who will, by the nature of his position, be called upon to exercise large discretionary powers, is first of all his ability to handle men. It is pretty well recognized that even the largest technical ability can be purchased at a price. It is becoming as well recognized that the really difficult sort of man to find is one who can manage those about and under him—and that his price is about what he asks.

Because our engineering and technical schools train their students in the handling of things rather than in the handling of people, there is at present a great dearth of men who can handle men. One of the most pressing tasks facing the industrial leaders of to-day is to supply this lack.

Now let us see what is the relationship between service and leadership, and whether what we call the problem of capital and labor may not be accurately described as an equitable allocation of rewards for service.

Most of us have an erroneous idea of capital; we think of it as personal rather than as impersonal, as a rich man rather than as a collection of things. That is, we confuse the ownership with the thing itself. I say "we" inclusively, for I do not grant that the proletarian has a more distorted view of capital than has the capitalist. There are misconceptions, superstitions and delusions on both sides, and until these are cleared away there will always be more or less friction and misunderstanding—much of it directly traceable to the misuse of the commonest terms.

Only an inconsequent amount of capital is represented in currency. We are supposed to have only enough currency to facilitate the exchange of the fruits of production, and although many members of the community have a high regard for quantities of currency piled in heaps, that is only because the usual productivity of the world is such that there are things which this money can be exchanged for. We are so accustomed to needing money for business pur-

poses that we grow to think that business depends on money, when, as a matter of fact, the value of money depends upon business.

Unless there is production and a consequent exchange of things there is no use for a medium of exchange. As production slackens the current medium of exchange becomes less and less valuable until we are much like a man adrift on the high seas with a great bag of gold but without either food or water.

Now to go back a little—capital is the difference between production and consumption and it depends for its value upon being again put into production. A miser, for instance, who hides his gold is only a collector with a taste running to money instead of postage stamps. To attain production, we must have at some stage, or more correctly, many stages, the busy, active human being. If we have no capital—that is, no excess of production over consumption—then there will be neither employment for human beings nor the fruit or produce of such employment. Each man has then to go out and grub his own livelihood just as do the animals. He digs and grinds just enough for his own daily needs and no surplus for the sustenance of others, or for the building of the nebulous entity which we loosely call capital.

But when capital accumulates in the hands of an individual or a community, it is necessary to get some one to use that capital that it may be made productive.

If the capital investment is small, consisting—to use a mechanical instead of an agricultural illustration—say, of an ax, then the owner himself can use the capital, but when that owner becomes the possessor of two axes he has to hunt up some one who will agree to use the second ax, and that second man will give that consent only when what he can gain by the use of the ax bids fair to exceed what he can gain by grubbing around on his own hook. You can say that this second man works for capital, but you will be more accurate if you say that he works with capital. And just as the worker with the ax will not consent to work unless he can get more with it than without it, so the owner of the ax will have no reason for employing some one to use it unless he, too, gains by the transaction. If putting his ax out to work is an expense instead of a gain to the owner he will keep the ax at home and idle.

If there is only this single unemployed ax in the community—and it is very easy for a man using the ax to make more with it than without it, there will be competition for the use of the

ax—that is, the owner of the ax will get more than the user of it; but if that community becomes prolific of axes, as it undoubtedly will if such a large income is made out of ax ownership, then there will shortly be more axes around than there are people to work them and instead of the man without an ax bidding for a chance to use one, the owners of the axes will be bidding for people who will for a consideration consent to act as ax-wielders.

And there you have in its simplest form the relation between capital and labor.

We do not always keep this relation clear. So many details from time to time enter in to confuse the issue and we get so far away from the primary facts which govern the possession and use of the ax that we soon find ourselves straying mischievously far from the pivotal, essential point.

Almost before we know it, we are talking about the ownership of capital rather than its use. For instance, if the ax-wielders vastly outnumber the axes and bid against each other on the downward scale for the right to use them, we talk about the degradation of society and the slavery of the worker. If, on the other hand, there is a great surplus of axes, the worker turns around and puts the ax owner

through a course of sprouts and we talk about the tyranny of labor.

It must first be made unmistakably clear that our real difficulties are traceable not to the ownership of capital but to the distribution of its fruits, for the moment that capital becomes productive—that is, of use to its owner—it must bid for labor. In other words, it becomes almost automatically—and to the advantage of everybody—available for community, as distinguished from individual, use, and it does not really make much difference who is the owner. If there is a great amount of capital it will require for its productiveness the services of a great number of people. The owner of capital would under such circumstances have to bid for the services of a large number of cooperating individuals, and, because of this division of labor into a larger number of units, he would necessarily have to be content with a correspondingly small return. If the available amount of capital is small in proportion to individuals, the individuals will bid or compete for the right to use it and capital will make a correspondingly large return. Just as in the business with the quick turnover as opposed to the one with the slow turnover, the greater aggregate gain always comes to capital when it

keeps itself moving quickly with a small margin of profit.

We do not change the function or the relation of capital when we transfer its ownership to the state or to any other kind of a common fund. It is the use, not the ownership or identity of the owners of capital, that is important. When we destroy capital we only mutilate our engines of production and invite poverty. If, for instance, a hired man drives a flivver for a farmer, and if, reflecting upon the evils of capitalism, he destroys the flivver, to some extent he injures the farmer, but to a far greater extent he injures himself. After all, he must live somehow, and it is conceivable that another means of earning his livelihood may prove not only less congenial but less profitable.

Considering the mutuality of the relations existing between tool owners and tool users, does it not seem ridiculous for the former to talk about "giving" people jobs, or to pride themselves on being good employers and thoughtful of their workers and all that sort of thing? And is it not just as ridiculous for the tool user to berate and belittle the property-owning individual? The association between employers and employees is economic and not charitable. There is no room in it for paternal-

ism on the one hand or obsequiousness on the other. Suppose employees, en masse, not wishing to be outdone in courtesy by benevolent employers, should pass up the proferred jobs saying: "No, kind sirs, we cannot accept your favors, we must not take of your bounty." Where would the benevolent employers be? They would be exactly where many employers found themselves during the man-short war years, that is, out in the highways and by-ways imploring people to work for them. The citizens of a country which has a Declaration of Independence for its charter can scarcely be blamed for resenting patronage in whatever guise it may be cloaked.

Steadily through the years capital has been accumulating until at times there is more capital for people to work with than there are people who want to do the work. For we have not as yet been able generally to establish a fair and sliding scale of distribution or to keep clearly before the minds of the owners of the instruments of production and the users of those instruments the relative value of their contribution. We should have gotten on much further in the allocation of shares by this time, I think, had not the war come in with its inflation and derangement of the currency—disturb-

ing the only medium in which the shares can be expressed.

The progression is well described by Mr. Keynes in his book, "The Economic Consequences of the Peace."

* "Lenin is said to have declared that the best way to destroy the Capitalist System was to debauch the currency. By a continuing process of inflation, governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens. By this method they not only confiscate, but they confiscate arbitrarily; and while the process impoverishes many, it actually enriches some. The sight of this arbitrary rearrangement of riches strikes not only at security, but at confidence in the equity of the existing distribution of wealth. . . .

"Lenin was certainly right. There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency. The process engages all the hidden forces of economic law on the side of destruction, and does it in a manner which not one man in a million is able to diagnose. . . .

"By directing hatred against this class (those enriched by the war), therefore, the European governments are carrying a step further the fatal process which the subtle mind of Lenin had consciously con-

* Reprinted by courtesy of Messrs. Harcourt, Brace & Company, publishers of "The Economic Consequences of the Peace," by J. M. Keynes.

ceived. The profiteers are a consequence and not a cause of rising prices. By combining a popular hatred of the class of entrepreneurs with the blow already given to social security by the violent and arbitrary disturbance of contract and of the established equilibrium of wealth which is the inevitable result of inflation, these governments are fast rendering impossible a continuance of the social and economic order of the nineteenth century."

From time immemorial people have been talking about the hardness of life, about the dreadful struggle for existence. They used to blame nature for these conditions. Then they got around to blaming capital, or rather capitalists, probably because nature is such an unsatisfactory thing to argue or quarrel with. Take, for example, the recent utterance of Louis F. Post:

*"Though wealth is abundant and wealth producing power emulates Omnipotence—degrading poverty and the more degrading fear of poverty are distinguishing characteristics of civilized life. Instead of lifting all to better conditions of opportunity, man's triumphs over the forces of nature enormously enrich a few at the expense of the many.

"They have done little to increase the comforts of

* From "Ethics of Democracy," by Louis F. Post, copyright 1916. Used by permission of the Publishers, The Bobbs-Merrill Company.

the toiling masses, even absolutely, but much to diminish their comforts relatively; and industrial liberty they have almost destroyed.

"The gulf between riches and poverty has not been filled in; it has been widened and deepened and made more of a hell than ever. So dreadful is the poverty of our time felt to be that it has inspired us all with a fear of it—a fear so terrifying that many more good people than would like to acknowledge their weakness look upon the exchange of one's immortal soul for a fortune as very like a bargain."

Now, the real trouble is not that "wealth is abundant" or that "wealth producing power emulates Omnipotence"; the real trouble is that wealth is not abundant enough and therefore wealth production is not great enough so that all may have. That is the crux of the difficulty—which we obscure by a welter of talk about democracy. There is, in short, a world-wide disposition to substitute phrase-making for work, with the result that production has waned—making the very conditions complained of still more acute. People imagine they quarrel over the actions of capital; as a matter of fact, they quarrel over the distribution of production, and while quarreling, steadily and wilfully diminish the amount which might be distributed. With all of our talk we are not very

far from the kind of intellect that once sent out the children's crusade. We simply have different ways of expressing our innate foolishness.

The idea that labor "works for" capital has resulted in a growing dislike for work and a growing aversion to and disrespect toward the leadership which makes the ownership of capital possible. Agitators are fond of talking about inherited wealth and its evils, and probably it has an undue mixture of evils, but inherited wealth is not a very important constituent of the ownership of capital.

In this country a large share of the ownership of the means of production is usually gained by the exhibition of large measures of leadership, and if that wealth happens to descend and the owners do not have leadership or do not have sense enough to drop out and put some one in who does have leadership enough to manage their affairs, their wealth is rapidly dissipated. Ownership of capital is not nearly so important as the distribution of its production, and for this task we have to have leaders or there would be no products to distribute.

This is fortunately not an academic proposition. It has been demonstrated conclusively in

Russia. There, at the beginning, democracy and the various inalienable rights of mankind were interpreted to mean the right to exist without work. The slogan of "maximum wages, minimum hours and minimum production" is not unfamiliar to us. The Russian workman has exercised to the full his right to live upon conversation about work and what this has led to is shown by a quotation from *Isvestia*, the official organ of the Soviet Government, in which Larin, the People's Commissar for Labor, says:

"We have got to abandon resolutely all idea of transferring the management of factories to the working people employed in them, for this measure results in merely substituting a new group of employers for a single employer."

In a recent issue of the *Revue Bleue*, Louis Narquet gave the following word picture of conditions existing in Bolshevist Russia:

"To say the least, these results constitute practically a demonstration of the problem which we are considering. In complete control of the administration of industry and labor, the Russian Bolsheviki have reduced working hours and increased salaries with the result that prices have risen to unheard of heights and production has fallen to an unprecedented minimum. General expenses are nearly ten

times what they were before and the price of manufactures has risen in proportion. The balance is idleness and misery. This is confirmed by the Bolshevist paper, *Derevensky Kommunist* (Village Communist), in number sixty-three.

"In place of working eight hours, resting eight hours and devoting eight hours to pleasure and instruction, the workingmen loaf eight hours, sleep eight hours, and play cards the rest of the time. Cards and loafing are the principal occupations."

There is abundant evidence from unprejudiced and disinterested sources that the Russian Communists have been obliged to put aside for the time being all discussion of work as an academic subject. Trotsky has transformed part of the military army into an army of industry, and instead of eight hours, the men are working fourteen hours, and instead of holding a pow-wow every few minutes as to whether or not they will obey an order, they are ruled with military firmness, infractions of shop discipline being punished not by fines or suspensions but by being shot at sunrise!

This regrettable and wholly unnecessary state of affairs in which starvation and tyranny have become side-partners in a country of fabulous, almost unbelievable natural wealth, has been brought about solely through

the same misconception and misrepresentation of what industry is and what leadership does that is forever being urged upon our own people and the results of which are viewed in such panicky fashion by those who are supposed to be industrial leaders, but who are possessed neither of capacity for leadership nor of even ordinary economic horse sense.

A parrot-like repetition of phrases, whether those phrases grow out of "Workers of the world, unite; you have nothing to lose but your chains," or whether they grow out of a deification of the Constitution of the United States, is not likely to get us very far toward our goal of increased production. If all of our "hot-air" factories were to shut down and the same energy be devoted to essential industries, progress would be fostered. I cannot see that there is much to choose between the extreme radical on the one hand and the extreme reactionary on the other, unless one happens to be interested in a clinical study of the various types of mental aberration and consequent irresponsibility. Since we manufacturers and engineers are neither professional alienists nor psychotherapeutists, why give profound consideration to the mental process of men who are baying at the moon? Stern, if not bitter, expe-

rience has taught us that nature does not give a living without the return of a working equivalent, and what most of us are trying to do is to discover how best to arrange the work we have to direct so that the participants in it, whether laborers, stockholders or consumers, shall get their due.

We cannot expect to reconstruct or recreate a world in which every one will be utterly satisfied. Such a world could not be peopled by human beings, for the natural human being is rarely satisfied, and it is really quite a task, although lightly undertaken by many, completely to change the mental composition of the world as a preliminary to putting in the particular system of reform which happens to be in vogue at the moment.

Our problem is simply one of expediency, and if we succeed in adjusting matters in our own particular community or section of industry, we can safely and will willingly postpone the recreation of the human being and the settlement of all the other everlasting conundrums that tease and perplex us. Some of the ways and means for attaining this lesser (and to what is known as the broad social consciousness, perhaps inconsequent) end, I shall take up in the next chapter.

CHAPTER VII

CHOOSING A LABOR POLICY

FOLLOWING the thought of the last chapter, which was that industry prospers only in the measure in which it serves, and that it serves only in proportion to its devotion to this single purpose of the human beings engaged therein, we are met immediately with the question: How can the human element be best organized to serve?

I am not using "serve" in any uplifting sense. It is a word that often holds a deal of cantish cheapness. Many worthy souls take it as connoting a standardized humbleness of spirit and a ritualistic courtesy—"the customer is always right" stuff. Or again it may be as expedition in the delivery of packages, having on hand a complete stock—especially of goods little asked for—grinning at a customer when he comes in, and immediately reaching a working agreement with him as to the state of the weather, thanking him when he buys, or thanking him for looking at the goods and

not buying. I recall a seller of washing machines who indignantly, and I think sincerely, denied that his service was bad, because, as he pointed out, "I never let a call for repairs remain unattended for more than 48 hours." The precise complaint made to him was that his "service department" was longer on speed than on intelligence. It had hurried a workman out on three successive days to repair what should have been repaired in one short visit, and had then charged the customer for all of the visits! To that fellow, merely getting a man out to a job was "service."

Service is not trivial; it is large and comprehensive. It comprises the deriving of the greatest possible benefit to society out of an industrial unit. This means that the owners of the capital invested, the managers of the capital, the workmen, and the public that buys, must all be the better off for its existence. There is no altruism in this large view, for unless all parties concerned are benefited by the existence of the unit it cannot continue to exist. More than that, its prosperity is in direct proportion to the equality in which these benefits are distributed.

One hears a good deal about the iron heel of capitalistic despotism squeezing blood profit

out of the poor, down-trodden worker. But I have yet to discover a company that became really prosperous when operated on the lemon-squeezer principle. The late King Leopold was roundly and properly denounced for the Congo atrocities. But it probably would have injured his feelings much more deeply if, instead of lambasting him as a soulless old gentleman, he had been shown by an engineering report that he was cheating himself. It could have been shown that if the region of the Congo were to be operated on the best basis he could not continue the atrocities unless he had them charged to his personal entertainment account; for his way of treating the natives really kept him out of an adequate money return. It has since been demonstrated that the Congo is much more profitable managed on a clean business basis than ever it was in the old atrocity days.

The victims of an unjust industrial program are sincerely to be pitied. But also you must extend some measure of sympathy to the originator of the program, for the poor fellow is swindling himself.

The organization of the human element is possibly the largest part of the whole organization of business. But it is only a part, and it

is not the whole; also, it is something different from what we call the labor problem, for it comprehends both those who work with their hands and those who work with their heads—those who fabricate and those who direct—the worker, the technician, and the executive.

The financial structure of modern business tends more and more to the separation of ownership and management, so that often the high executive management is really nearer to the workingman than it is to the capitalists. That I shall take up in the next chapter in a discussion of the organization of the executive, but here we shall treat only of the wage earners, with the caution, however, that satisfactory labor organization is predicated upon a satisfactory executive organization. A large amount of what is called labor trouble gets back to a too strongly centralized executive control or to the fact that in the executive organization are men who would be of greater benefit to society if their talents were being otherwise disposed of.

Let us narrow our question, then, to "What is a good labor policy?"

This can be answered in a single sentence. A good labor policy is one that works.

I fear that this answer would not be consid-

ered as wholly conclusive by those who are committed to the "laboratory" method. In that school any labor policy to be designated as a good one must contain certain elements which the investigators have, by their experiments and analyses, isolated. Whether or not the policy works in practise is of small matter. My experience teaches me that the sound, comprehensive and universal labor policy that is automatic in action and always successful is sitting beside the pot of gold at the end of the rainbow. The human being is best managed by a policy that has no more aristocratic lineage than far-seeing expedience. It is the habit of to-day to speak very lightly of the *laissez faire* doctrines of the classical economists—to claim that the law of supply and demand belongs to the hoopskirt period, and to affect a certain superiority over those who have gone before. And yet I am not convinced that those modern doctrines which are called "radical" or "progressive" at all accelerate the progress of the world. For instance, the trades union, although it has performed a valuable service in curbing unscrupulous and therefore short-sighted employers and has thus benefited business—even if unwittingly—has not of itself permanently advanced wages or bettered working condi-

tions. The unions have merely, from time to time, registered the price that the increasing volume of capital must pay for the services of man. Laws may compel employers to provide air and light for their employees; but common sense teaches that it is very wasteful to pay wages to a man and then expect him to give a return for those wages when huddled into a dark, air-tight vault. The clothing trade in New York gives convincing evidence of these truisms. In the ten years before the war great hordes of immigrants from Russia and southern Europe surged into New York. Most of them knew only vaguely why they had come, and few had the money to go farther. In a general disillusionment, the only employment that offered was to work with the needle, and at whatever price and under whatever conditions the employer chose to impose. The employer was the master because he held in his hand the means of existence. It was work or starve. The newcomers were glad to be permitted to exist. The employers saw to it that they did not have a chance to be glad over anything more than mere existence. The wages were pitiful. The slaves could not strike. They never thought of striking. But, when the war shut off immigration—when the stream dried

up—then other trades began to call for men, and no longer did the sweat-shop owner hold the power of life and death. He could not pick and choose his people—he now had to bid for them. He had to bid with both wages and work conditions and soon to treat with unions and strikes. Neither the employees nor the employers brought about this change in conditions. Economic forces created the new order.

We find economic and not human factors controlling in every line of industry. We may compliment ourselves as Americans on our skill in the devising of labor-saving machinery. But, if we investigate, we discover that our machinery devising is only a result. We had to have machinery because we did not have labor. You will find that in any line of industry the development in automatic machinery is in proportion to the scarcity of labor in that industry.

To go back to the needle trades. Not many years ago it was not even necessary to provide the worker with a sewing machine. To-day, the companies that are making money have rather a high machine development.

During most of the years of our history, and especially during the boom times following the close of the Civil War, our manufacturers had

to offer wages and inducements which provided a better living to a man than he could make on his own farm—for at that time practically any one who wanted a farm might have one. Therefore they had to offer high wages, and, in addition to that, had to make these high wages effective by the use of machinery. A labor status is not brought about by the meeting of the minds of the employer on the one side and the employees on the other. Neither of them have had much more discretion than the puppets in a Punch and Judy show.

The economic forces have controlled. They will continue to control. This does not at all mean that we should stand still and watch the show go by. We can help to mold, not the world-wide conditions, but our own particular conditions to at least some degree, and we can thus understand how to make the more out of our own particular situation. With many elements we are bound to be unacquainted—nature acts in a mysterious way.

One thing, however, we have learned. It is this: While the restrictions of production at an appropriate moment may bring advantage to either the employer who shuts down to sell off his stock at a high price, or to the employee who makes a group demand for increased

wages at a moment when large production offers a big profit to the employer, yet in the end neither side really benefits. The permanent benefits come from an always larger and larger production at a decreasing cost—that is, with a minimum of waste. It is the part of industrial engineering to teach this latter truth through putting theory into practise.

The well-being of any particular industrial institution depends upon how well it produces and thereafter sells. Therefore any labor policy which attempts to consider labor as apart from production, as a commodity, is bound to fail. One of the troubles with the average trades union is that, while declaiming that labor is not a commodity, it insists that the service of men should be bought in bulk and at a market price fixed by the union. That is, the union really insists that labor be considered as a commodity and have its price fixed.

We know that human beings do not always act in the same way under the same circumstances. That is the trouble with every variety of standard, nation-wide labor scheme. The man in the first-floor apartment may be yelping with joy because he has corned beef and cabbage for dinner, while the man in the second-

floor apartment may be trying to murder his wife because she has provided corned beef and cabbage for dinner. An elaborate mental analysis might disclose why the one yelps and the other murders in the presence of corned beef and cabbage. Now we might well have a whole colony of anti-corned-beef-and-cabbages, and I, because I like this food combination, might insist upon feeding it to the colony and pay no attention whatsoever to the resulting riots. And so it is with a labor policy. We can be perfectly certain that a completely worked-out policy cannot be given country-wide application; and it would not be a recommendation of such a policy to prove that it succeeded more often than it failed. It would only prove that a perfect 36 is more comfortable in a 38 coat than in a 34—it would not prove that the 40's and 44's were comfortable in the standard 38.

There is no doubt that a national labor policy of universal application would be extraordinarily convenient. The nation, as well as the participants, suffer in industrial warfare, and therefore it is perfectly natural that the outsider should say: "Here, stop this racket; get together and do something in a quiet way." It is further natural that demand should be made

for some law or policy that would operate to prevent similar disturbances in the future.

To such an extent have socialistic doctrines influenced us that many members of the community, who would be quick to disavow even sympathy with socialism, are quite ready to agree that there can be a universal panacea. The socialists and their non-conformist brethren—the communists, the syndicalists and the whatnots—all have their panaceas in a reorganized society. And therefore we non-socialists, not to be outdone in constructive thought, must needs have our universal arrangements for the ending of labor wars. Being a little uncertain of our ability to get out a complete national law to regulate labor, we have, of late, been taking refuge in the enunciation of labor policies, for, as it is well and extenuatingly said, to state the problem is to go forward to solve it. And so, whenever two or three are gathered together in the name of this or that association, the day is considered as well spent and the minds are free for golf and dinner if a neat set of resolutions are adopted declaring the "principles" that should govern the relations between capital and labor. It is indeed a barren meeting that cannot bear a well "whereased" set of principles.

It will indeed be an obtuse mind that would fail to grant that stating a problem is the first step toward its solution. We learned in school that first of all we had to state our problem; but several of us learned that a long, hard road lay between that statement and the flourish of the "Q.E.D." And sometimes also, the teacher, observing our mental anguish, and investigating its cause, would remark that perhaps our troubles might be lightened if we revised our statement of the problem to make it conform to the task that had been given to us. And therefore I shy a little at the easy enunciation of our labor difficulties, recalling somewhat diffidently that my most fluent answers to examination questions were commonly wrong.

Take the first Industrial Conference called by ex-President Wilson. It broke up in a row because the principle of collective bargaining could not be agreed upon. The members could not agree because they refused to find a definition of the term. The unions insisted that it meant fixing wages by agreement with the union. This is a purely technical definition without foundation in fact. The employers, on the other hand, refused to grant that the principles had any union connotation, although all of them knew perfectly well that in effect they had al-

ways bargained collectively, because if the wage they offered from time to time was not attractive they could not get workers. So that conference broke up because both sides refused to be frank.

The second Industrial Conference was organized so that it could not break up, and it rendered an interesting report which contains some general observations that are not without value. Almost every trade association and chamber of commerce have passed resolutions which say in effect that the world is round and water is wet.

There are others who agitate themselves over the plan of the Kansas Industrial Courts notwithstanding the fact that Kansas is not an industrial state and has had to do with one particular condition and matters cognate. There are still others who talk about the Australian system of compulsory arbitration, although that system failed the moment that the members of the boards stopped playing at Santa Claus.

No very elaborate organization is required to grant raises in wages—a first-class rubber stamp, an ink pad, and a small boy could perform all of the functions of the average industrial court.

Do we want a definitely stated national labor policy? Has our experience with the national control of anything been such that we desire to extend that control? Can we still seriously subscribe that wisdom is a gift of the law rather than of God?

We had some experience with labor boards during the war. We had many ingenious gentlemen traveling about the country raising wages. We had the War Labor Policies Board clothed in college wisdom and talking nonsense. Among the several very remarkable policies which that board enunciated in fair language was the differential in favor of shipyards, with the further provision that every shipyard in the country should pay the same rate regardless of the skill of the management or the local cost of living. This of course resulted in extraordinary wages being received in those yards where the management had applied science to the working out of adequate piece rates and the planning of work. At Newport News, with the work well planned and every convenience at hand, a half-skilled workman on certain jobs would run to $400 a week on the national scale, while the same workman in one of the mushroom shipyards where nothing was planned would hardly gain a living wage.

And as a by-product of this ruling we had the strike of the machinists on the railways. These men could not understand why, with Uncle Sam holding the bag, they should get one rate in a shipyard and another rate in a railway shop for doing exactly the same work! And no one could help them to such an understanding. A uniform policy may operate with fair success in a small, homogeneous country. But even England cannot well manage under the somewhat broad industry policies of the Whitley Councils—they are not a success. The Socialists always want universal rules, but the principles of Marx, that are in the mouth of every radical, are in process of being interpreted in Russia, so that now about the only thing the old gentleman could claim credit for, if he were alive, is the general title.

It is results that we are after, not principles. Principles are valuable in guiding thought, but they are dangerous when considered as positive instructions. Take one of the questions on which disagreement is most violent—that of the relative efficiency of the closed as against the open shop. Carefully selecting my cases, I can prove either that the open shop is infinitely to be preferred; or I can turn around and prove the opposite. Whatever conclusion I present to

you will be worthless to an individual corporation manager seeking information. Because I prove that the open shop is better or because I prove that the closed shop is better will not in the least help any one who is trying to decide on his own policy. Only the conditions of work in the particular shop under investigation, and not deductions from other experiences, will determine the right policy.

The American Rolling Mill Company at Middletown, Ohio, has attained a very high general efficiency. One of their large departments is run on the union, closed-shop basis. All the other departments are on the open-shop plan. There is no distinction in efficiency between the union shops and the non-union shops. They have never had a strike. During the steel strike their union men did not go out.

On the other hand, the unions are so entirely well satisfied with the conditions in the shops of the Endicott-Johnson Company at Endicott and Johnson City, New York, that they frankly say that it would not be worth while to attempt organization—that nothing could be gained by organization, and hence we have the surprising spectacle of the executives of this large company being on the best of terms with the union officers without the slightest effort on the part

of the unionists to effect, or even to ask for, organization.

In other parts of the country we find closed union shops operating at an absolute minimum of efficiency and on the most approved lines of English unionism—which means that a day's work is not to be regarded as an essay in production but rather as an endurance test to see whether it can be managed without the violation of some of the voluminous union statutes. In other places we find open shops running on a minimum of efficiency.

I am inclined to view the whole question of unionism as one dependent wholly upon the circumstances. Any individual case can be decided by putting down what the business wants to be and then endeavoring to discover whether its legitimate objects, which include the good of all concerned, can best be achieved by an agreement with a union, by an agreement with the employees, or by proceeding under no agreement whatsoever.

It may be said that this choice is not always present. Just as unscrupulous employers have, not knowing what business is, tried their short seasons of profiteering against their employees and the public, so also has the same type of

man as a union leader instead of as an employer embarked on his season of profiteering. When an unscrupulous employer meets an unscrupulous union leader, they are bound to take one of two courses—to engage in something akin to a gang row or to become partners in crime. Or, to put it another way, to become partners in the destruction of the business unit by making it of the least possible service to the public. The last method is a favorite one, for, neither side having a glimmer of the economics of business, they can easily agree to go a-looting together. And while they think they are looting the public, really they are looting themselves.

We might draw many excellent examples of this sort of thing from the woolen and cotton trades. The sweet waters just above the bankruptcy falls are dotted with the boats of these jolly souls. Some of them glide quietly on to destruction, while the more exuberant spirits even insist upon rocking the boat as they go.

The real question to decide in any one case is: How may we best attain our objective? And this is a matter to be decided with all the cards on the table. To attempt an agreement under any other circumstances is only slightly to postpone the absolute inevitable conse-

quences. It was very sound advice that *Collier's Weekly* gave some time ago when it editorially said:

"Every strike is settled around a table. Why not make the settlement before the strike begins?" And then the editorial continues: "On that text Collier's has proposed that America go forward to lead the world in the attainment of industrial peace. We have said: 'Let's have the United States create a Board of Industrial Adjustment to be appointed by the President. Then let's have the board divide the country up into zones, somewhat like the Federal Reserve districts, and appoint chairmen for each zone or region. Then let's have that chairman ready to appoint arbitrators for disputes when both parties consent to arbitration and to abide by the result.' Where the parties fail to consent, then let's have the chairman and an investigating board given legal power to summon and examine witnesses under oath, to find out what is the matter and tell the public! In other words, let's crystallize public opinion with facts."

A remedy of this kind is a valuable last resort. It, in effect, says to any group of employers and employees: "We know that you could arrange your difficulties were it not that

one or both of you want to cheat. Therefore we are going to investigate you as we would a pesthole; and after that investigation has been made public, you will either fit yourselves to live in a decent community or public opinion will see to it that you get out of the community."

We have such pestholes in industry—the coal trade is one of them. The man whose business requires such public investigation is not to be ranked as a captain of industry or a leader of labor but as a social criminal who is out to get while the getting is good. He does not as a rule get anything because nature in her quiet way sees to it that crime has its fitting reward.

We find most labor troubles in unscientific industry—because then each season of work presents itself both to the employer and to the employee as a grabbing opportunity. For my own part, I find that the largest efficiency may often be reached with a union organization when, as a preliminary to the arrangement, the old-fashioned union notion of a flat wage regardless of individual performance is abandoned. In the ordinary union negotiation the sole dispute concerns the amount of the flat wage. A uniform wage without a corresponding uniform production is a negation of indus-

try, and it is now so recognized. Samuel Gompers, in an interview in the *System Magazine* of April, 1920, acknowledged this point when he said:

"The union wage is a minimum wage, and it is arrived at as being in the nature of a safeguard against paying a man of a certain skill less than a certain amount for his day. But however erroneous may be some of the opinions on the subject, wages are paid out of the production and out of nothing else. Therefore, those who, in the name of unions, oppose the introduction of better methods of work are catering to ignorance and not to union principles. . . . Having fixed upon the minimum amount of work, we are to take into account that all men are not equal, and there is no suspicion in the union doctrine that all men are equal in ability, and I should therefore arrange to pay my people in proportion to the amount of work they did above the standard—not at all in the way of a bonus, not as a gift, and not charitably, but with a mutual recognition of the fact that, if prices are calculated upon the man doing 10 articles a day, if he then does 20 articles a day the employer can well afford to pay the worker who produces 100% more, 100% more wages, because the overhead

expense remains just the same. This is a principle recognized by most industrial engineers and it is perfectly fair to all parties."

Whenever I make this remark, some one is certain to say:

"That is all well enough, but our people insist on a flat wage—a uniform rate. They won't listen to anything else."

That has not been my experience. Of course in any case where a governmental agency has interposed one of its sinister rulings, there is nothing to be done. One must then muddle through as best he may and pray that the fool-catcher hurry on his rounds. But where unrestricted, and one side, whether that side be the employer's or the unionist's, desires to get the most out of business, true business principles can be put into effect. Take the garment trade in Cleveland, where is in progress what I consider in many ways the most important of all our industrial experiments. It is founded on the basic principles of industry. The Cleveland situation was for many years a struggle between the union leaders on the one hand and the employers on the other. They had one very disastrous strike which lasted through the better part of the year and for the time being broke the union. Since then the

open shop has obtained, and in many of the shops a trades-union member was not allowed to work. Several of the largest shops were far-seeing, and they operated on scientific principles, with fairly set piece rates and committee management. During the war the union influence grew and there was a strong possibility that at some future date another deadlock might be reached.

The leader of the trades unionists in the Cleveland garment trade is one Meyer Perlstein, who is a student and who has obtained a rather broad view of business. Without setting up any false modesty, I am glad to say that my writings on this subject were not without influence upon him. I write in order to help people to a better view of business, and I cannot feign a modesty when the words do what they were sent out to do.

The unions and the employers arrived at an agreement of which the following is a part:

"In view of their primary responsibility to the consuming public, workers and owners are jointly and separately responsible for the cost and quality of the service rendered, it is agreed that cooperation and mutual helpfulness are the basis of right and progressive industrial relations, and that intimidation and coercion

have no proper place in American industry. To provide a means whereby the parties may cooperate, both to preserve peace in the industry and to further their mutual interests in the common enterprise this agreement is entered into.

"On or about October first of each year, the Referees shall take up the matter of wage-scales, and on or about November first shall make such changes in the then-existing scale as shall, in their judgment, seem advisable. The wage-scale thus promulgated by them shall be effective at a time to be fixed by the Referees, which shall not be prior to December first of that year, and shall be the scale in force for the year next ensuing, except that four months thereafter the subject may be reopened for the purpose of making adjustments in conformity with changes in the cost of living, which adjustment shall be made on or about April first, and become effective at a date to be fixed by the Referees, which date shall not be prior to May first; provided, however, that the scale adopted for the year 1920 shall be effective as of January first of that year, and that there shall be no changes in that scale before December first, 1920.

"The wage-scale shall be determined after

thorough investigation of all ascertainable facts, with due regard to the public interest, fair and equitable wages conforming to American standards, and to the progress and prosperity of the Industry. A united effort shall be made to promote all interests by increasing continuity of employment.

"Disputes between an employer and an employee in an individual shop, affecting a member of the Union, shall first be taken up between the employer or his representative and the worker concerned or his representative, who must be an employee of such shop, for the purpose of adjusting the differences between them. In case of failure to make satisfactory adjustment, the matter shall then be taken up by the Manager of the Union and the Manager of the Manufacturers' Association.

"Disputes of a general nature concerning such matters as hours of work, general sanitary standards, general wage-scales, and classifications in connection therewith, and so forth, shall be taken up directly by the Manager of the Union and the Manager of the Manufacturers' Association.

"If they fail in either case to make a satisfactory adjustment, the dispute shall then be arbitrated by the representative of the Ref-

erees appointed for that purpose and vested with the full power of the Board of Referees, subject only to a right of appeal to the Board from his decision on matters relating to principle or policy. This representative shall reside in Cleveland, and may be called upon at any time for the investigation or hearing of cases properly brought before him. No case shall be heard by him, or by the Board, which has not first been taken up in the successive steps set forth above. The decision of the representative is final unless and until overruled or modified by the Board of Referees, except where a member of the Board, upon cause shown, shall deem it advisable to suspend execution of the decision of the representative, pending appeal. . . .

"The expenses of the Referees and their representative in administering this agreement shall be borne equally by the Union and the Manufacturers' Association by making such deposits to the order of the Referees as from time to time may be required by them."

My company was retained to make a scientific study of the piece rates and to arrange schedules on a basis of compensation by units of work. The value of these units can be expressed according to the purchasing power of

the dollar. There was no wild enthusiasm over accepting this scientific basis of work. If there had been I should have feared for its success. It was frankly a new idea to both the employers and the trade unionists, and they only accepted it after very thorough discussion and question.

One of the most interesting meetings I have ever attended was that of the union representatives and as many of the members as could crowd themselves in the hall to ask me questions preliminary to the acceptance of the idea. After full consideration they accepted, and our engineers are working out standards of efficiency based on time studies through the thousands of operations involved in the making of women's clothing.

There is no longer any guessing about wages; there is no longer anything to compromise about. The employers and the employees have decided that the only mutually satisfactory joinder must be to gain production—it is not an elocutionary alliance, it is a producing one. And further, the employers have guaranteed nearly a full year's work; that is, they have set themselves to taking the clothing trade out of the black list of seasonal industry.

But what did they decide about the closed shop? It was not necessary to decide anything.

The shops are open. But since the unions and the employers are jointly paying for the entire cost of the reorganization of the industry, on a scientific basis, every employee will probably become a union member, for otherwise he would be a parasite.

The union is probably a passing phase of industry. When all parties realize what industry is, the union will no more be necessary than is a vigilance committee in a well-governed community. But it can be as at Cleveland, a great constructive force. In other communities I have found better results through the shop-committee system. (Some of which I have presented in "When the Workmen Help You Manage"—The Century Co., 1919.) But the point that I want to make is this:

It is always bad to commit oneself to any kind of a rigid policy that is designed to be of national application. The facts in the shop or small district will decide the policy. Let us be chary of perfection.

CHAPTER VIII

GETTING EXECUTIVE LEADERSHIP

An executive organization consists of something more than a chart which records that the executive power begins with the president, the chairman of the board of directors or the chairman of the executive committee, as the case may be, and then descends and subdivides through a number of departments and executives, depending upon the size of the institution. Such a chart is exceedingly useful because it is about the only way the working of the business can be visualized. But the question that I find it necessary to ask when viewing one of these specimens of the draughtsman's art is:

How much initiative and real power have these subordinate executives in their neat little charted cages?

It is in the answer to this question that we discover whether the division and subdivision of power make for a live and throbbing company of co-workers, or whether these lines

merely show the routes by which all matters travel to the top. Is the chart a map of the confines of the human energy employed, or does it show the direction that the various units of human energy shall move in? Or again, does it merely indicate how the "buck" passes?

In a previous chapter I have said that many of the difficulties that hamper a company's progress—and especially many of the labor disorders—arise from a lack of executive leadership. Therefore a form of organization must be adjudged good or bad according to whether it encourages or discourages leadership.

An organization is nothing of itself. When one speaks of the automatic, smooth-running machinery of Big Business, one is talking nonsense. The wheels do not go around of themselves: they must be propelled by leadership. There is more danger, we are just beginning to realize, from over-organization than from under-organization because the former discourages leadership. George Eastman once said that one of his greatest fears was over-organization. He was afraid that, unwittingly, his large affairs might become so scientifically arranged that each man would find himself bound hand and foot with the red tape of an inflexible routine.

Some of our most effective business instruments have no conscious organization, and such an "unorganized" organization is often the best of all, for then the people are not concerned with limitations of authority, and they work together in a perfect harmony. That is the situation at the Newport News Ship and Engine Building Company, where, although there is a very specific organization, it is not down on paper. It exists by tacit agreement. An absolutely free play for initiative is always of the highest value—provided a check exists against any individual error of judgment going too far. In the shipbuilding company the check will be found in the close personal association of the various executives. They consult among one another, not through any rule, but because they honestly want to get the benefit of opinion and advice.

We are frankly in something of a transitory stage in the matter of executive organization. Years ago when interests were smaller, every concern, no matter how large it might be, was built up by one man; he carried it on his shoulders. Our earlier merchants and manufacturers not only knew everything that happened, but every detail of everything that happened. And no matter how large a force they might

assemble around them, every member of that force was really an office boy or a clerk—regardless of his title—and quite without discretion. For the small, one-man business, this is still the best type of organization—provided the man at the head is content to stay everlastingly on the job, and has the ability really to direct. We are sometimes organizing when we had better be working.

With the growth of the larger corporation came the question of the delegation of authority. The term "delegation of authority" is unfortunate because really it means that the delegate has very narrow limits to his discretion. And, in an organization where authority is delegated, we will find practically the old-time one-man control, excepting that the affairs of the business come to the head in abstract instead of in detail. With him still rests the final "yes" or "no." He does not review: he decides. If the concern becomes large enough, this method develops into a very highly centralized machine, with all of the motive power coming from one man at the head.

In order to get away from this rigid centralization another form has found favor in which the executive power is apparently lodged in a committee or board of managers, or some ap-

propriately entitled group. It is supposed that a multiple-headed, rather than a single-headed, direction is better.

We have a still further development along similar lines in the large company that operates many factories or stores in various parts of the country. The question there, too, is one of centralization. Is it better to concentrate all of the power in the home office, or can a looser organization be made effectual?

There is not the slightest doubt that, from a purely scientific standpoint, a minimum of waste will occur in that sort of an organization which is planned after the manner of a great machine with exactly fitting cogs, and every act, as well as every bit of material, exactly standardized. Then, applying the motive power at the proper point, every part does just its work and all of its work—and nothing more or nothing less. But an executive organization represents a gathering together of human beings in order that their collective energy may be of the utmost avail. Now remember that we are dealing with human beings and are concerned with getting the most out of them. We are not treating of something that is abstract—that if solved on paper will also be solved in practise.

For a time it was, indeed, believed that an organization formula, or ritual, or system, could be so perfected that the head of a company might, by pushing a button, have practically any business task performed perfectly and on a scheduled routine. And further, it was supposed that, given a perfect plan, any kind of human being would fit into it like an interchangeable part and perform auspiciously at just about a living wage. "Get cheap people and plan their work" was the slogan. Most banks, for instance, were put together on this principle, and many still cherish the idea. Simply an immense number of routines were devised throughout our fair land by "experts in organization." We tried to do business on forms and card indices. The theory was that if you put a high-priced man at the head, gave to him practically all power of decision, scattered a few moderate-priced people at points where minor decisions had to be made, then you could fill up all the spaces with the lowest-priced help. In the little view of business, any form of organization that promised an increased reward to the head officers, taken out, as it were, from the pockets of the less important, was not without an appeal.

It was, however, discovered, painfully it is

true, that the main object of the executive side of business was not to perform a certain number of repetitive operations with machine-like regularity, that a business was not static, that it had relations with the public, and that the public was not always satisfied to have a purely mechanical operation performed on it.

Take, for instance, a matter which is purely mechanical—that of billing. Mistakes will occur in billing—mistakes will occur everywhere. But there are few things that irritate an individual more than the receipt of an incorrect bill. No normal person receives bills with pleasure, and when he gets one that is excessive he is apt to shoot it back with the sharpest comment he can command. An incorrect bill promptly corrected can be made the opportunity to create good-will. The quick and courteous acknowledgment of a mistake often makes a friend.

But in a purely machine organization where there is no discretion excepting at the top, it is a long and arduous proceeding to get a bill corrected. The machinery will often have no reverse. There are department stores in this country, there are business organizations, that seem to have no method at all of correcting an improper account. A customer will write point-

ing out the error, he will get a card acknowledging his communication, and then in due course he will get another incorrect bill, and this time probably it has as a companion a request for payment. The human cogs in the machine do not care; they are not paid to care. They are paid to go through certain motions, and they know that they are hired only because no cheaper means of doing the work can be found. Under such conditions they would be fools if they did care. This same sort of thing shows in every public relation of this machine type of organization. It gets on to a basis comparable with that of a government office. Practically every one has, at some time or another, complained to the postal department for some negligence in delivery. The first reply which comes after many days is purely formal. Then if the complaint is serious, one eventually receives a letter which, if it says anything at all, must be considered as saying that there is no basis for the complaint. The express companies had the same idea well worked out. A claim against an express company in any amount that was not worth going to court about was practically hopeless. If your claim were adjusted, it was, as a rule, about six months after the happen-

ng. And the managers wonder why the trials ınd tribulations of express companies and their)erennial pathetic appeals are received by the)ublic with gleeful derision! Practically all)ublic-service corporations for a time followed he same rules of machine conduct, so that it is o-day all but impossible for the average public-ervice corporation to receive from citizens the ame treatment that those citizens would cheer-'ully accord to their fellow workers in distress. As an example of how the brainless, mechanical organization may function, take the example of a gas company near New York. It used to be 'ery unpopular—so unpopular that finally it lawned upon the directors that perhaps the business was being injured, and they elected a new president who was instructed to see why it was the company had no friends. The new president was a young man who had no training in the then approved practises of public-service corporations. He started out to find he trouble, and, as a first step, abandoned the seclusion of the private office of his predecessor and took a desk out in the general room. A peculiarity in the arrangement of the departments at once struck him. The cashier's window, at which bills were paid, was only a few feet from the complaint desk. This latter desk

was presided over by a tired young man working for a tiny salary, and he seemed to think that his object was not to receive complaints but to get rid of them. He took the well-known attitude that any one who objects to anything is by nature a crank and by disposition a knave, and so around the complaint desk from morning until night surged a battle; sometimes the clerk was efficient enough to have half a dozen complaints going at once. His notion of success was bound up in the word "fight." He would have made a fortune in the I.W.W.

The president noticed that many of the people in the cashier's line, overhearing the scraps at the complaint bureau, were spurred on to think of complaints that they might make on their own account, and a goodly portion of them, immediately after paying their bills, joined the line of the complaint bureau, anxious for the chance to break a lance with the company's representative. The complaint bureau thus not only did not settle complaints but helped to promote them. The president reasoned that every complaint was an opportunity to sell the company to the customer, so he abolished the complaint desk, opened a service room far removed from the cashier's window, and put it in the charge not of a clerk but of a spe-

cially elected executive of the company drawing a good salary, and under instructions to see that no reasonable complaint went by without satisfactory adjustment, and that even the most unreasonable complaints received at least adequate attention. Recently that company found itself forced slightly to increase the rates, and instead of being violently opposed they found that their people accepted the increase, not cheerfully, for that would not be human, but as cheerfully as the circumstances would permit and in confidence that the company was playing fair. The old management had simply taken for granted that their organization was sufficient. For if you have a department of complaints, have you not done your duty? Why bother with the public relations?

A private business, organized in this fashion, may, if the idea behind it is sufficiently good, or if the competition is trivial, muddle though. Sometimes where the managing head has an ability approaching genius, the enterprise may prosper exceedingly, but neither the business nor the prosperity is stable. There is no proper foundation, and we may regard it as depending upon whether the ill-will that its management generates catches the good-will

contained in the fundamental idea. Usually the ill-will, given time, wins.

But more important than any other consideration is the fact that a concern organized on this principle will gather to itself a minimum of ideas, and although it may be very busy and successful over a number of years, it will start downward once it meets the competition of a business that is constantly receiving new ideas.

It may seem haphazard to rely greatly on individual initiative. It would seem to be the part of wisdom to safeguard and to plan activities, to develop teamwork, and thus to eliminate waste of material and waste of human activity. That is undoubtedly the case. An unorganized business cannot get anywhere. Nothing gets done, although every one is working overtime. But what I am warning against is the thought of trying to provide against every emergency and contingency by a documentary instead of by a human means. It is perfectly impossible to stifle individual initiative and to expect to achieve success.

To take the ultimate in regulation, look at the truly extraordinary inconveniences of bureaucratic government. In a Communist state each human being is supposed to occupy

a particular pigeonhole to which he is assigned by an allocating body and which also prescribes what he shall eat and wear. There is a place for every one, and every one is in his place. On paper it is all perfect. The Communist state, from a draughtsman's viewpoint, leaves nothing to be desired. They tried this out in Hungary for a while, they are trying it out in Russia, and they tried the same sort of thing, but differently entitled by reason of the war regulations, in most of the countries of Europe. What was the result? Wherever there was a highly scientific and well-systematized method for distributing food and clothing, those who needed food and clothing spent most of their time, regardless of the supply, waiting in line at offices to get the necessary authorizations. The other day I came upon a note made by a resident of Hungary during the Communist administration. He had broken a window and wanted it repaired, and this is what he had to do.

First he went to the local authority, stated his case and filed the papers necessary to inform officialdom that he was alive and a citizen, and had a broken window. He was then sent to the central authority, where he filed another set of papers more firmly establishing that he

had a broken window. In due season that body authorized him to proceed to the department more intimately concerned with the repair of broken windows and the establishing of the fact that his window was broken. In officialdom repetition is synonymous with certainty. Here again he filed all of the necessary papers and in due time a sort of Board of View composed of two eminent Communists came out and surveyed the broken window. They reported back in due course, and again in due course the householder received authority to go to a glazier and have the window replaced at a fixed price. The glazier, being authorized to act, then began his official quest for a pane of glass of the proper size, and finally, at the end of about four months, the new window was in place.

We regard this as a perfectly ridiculous exhibition of what officials can do when right on the job, but, as a matter of fact, there are plenty of corporations in this country in which a stenographer has to go through about as cumbersome a routine in order to get a new pencil. I know offices where the under-executives buy most of their own supplies rather than hang around waiting for their requisitions to be acted upon. There are highly organized com-

panies where the employees frequently will not use proper tools or appliances, although such are in the stockroom ready for use, merely because of the infinite trouble and delay in securing them.

System up to a point facilitates operation, it takes the conscious effort out of small movements and liberates the mind for larger affairs; but, carried beyond that point, there is a likelihood that while conserving it will be wasting. Where the line must be drawn is always an individual matter, and in the most efficient organization, careful record will be made according to the temperament of the executives and department heads in order to avoid routine that will burden.

The nice point in executive organization is to make the fullest use of individualism that is consistent with teamwork, for then we are insuring the flow of fresh ideas, while at the same time we are not letting individualism run riot.

This general principle holds through the entirety of corporate organization, through the tiny corporation, and through the great corporation, with many branches and subsidiary corporations, and is distinctly a modern development and a reaction to the highly centralized machine structure which was at first be-

lieved to be the ideal form of organization, just as for a time after Taylor had begun his investigation it was thought (although never by Taylor himself) that a man could be turned into a machine. It is the answer to the idea that the size of an institution is limited by the directing power of a single head.

We have to consider the human element, and it is a question of fact in any given case whether any economy gained by centralization of management in purchasing or in sales, or in any department, is not balanced by the loss of human initiative.

Take the chain stores, for instance. The five- and ten-cent stores depend upon a central purchasing power, and they distribute their product to counters in their various stores, at which are present not saleswomen, but merely people to handle the money. The goods are supposed to sell themselves, and largely on price. But it has been discovered that the same principle will not work in a dollar store, or even in a fifty-cent store. It will not work wherever salesmanship is required. Then the necessity for a personal contact appears, and that personal contact is not gained through an uninterested, ill-paid clerk.

This fact is advantaged in the cigar store and

drug chains. There the purchasing is centralized, and it might seem that the five- and ten-cent store principle of quasi-self-service would obtain. But the purchase of tobacco and drugs is on a personal basis. A man does not always want the same kind of cigar, or cigarette, or smoking tobacco; his taste changes, and he wants to shop around a little in the stock. It is likewise with a woman in a drug shop. Therefore instead of low-priced clerks, the more successful of these stores pay far above the average for retail salesmanship service and add a commission on sales that makes the employment distinctly well paid.

There is no question in chain distribution but that the purchasing should be from a central source, and in general purchasing can be best handled from a central source; but there are a not inconsiderable number of organizations, especially those joined through a holding company, where centralized purchasing is not the most efficient because the relation between the using unit and the central purchasing agency cannot be made close enough to take advantage of the economies that may be effected in the price of things bought in bulk.

In the General Motors Company, for instance, most of the units are so large that there

would be little advantage in combined purchasing, and the combined purchasing department would have to be a very complex affair. They have found it better in most cases to maintain wholly separate buying, manufacturing, and selling organizations for each of their branches, on the theory that the competition to achieve results will create a greater and more profitable business than were any of the attention of executives shifted to standardization of economy. The Eastern Kodak Company is similarly organized. There each unit, although five of them are located in the one city, may take or leave the services of the centralized departments of the corporation. The head of the unit has, in this respect, an entire discretion. He is not merely the manager of his department: he has every indicia of ownership. He does his own thinking, and his thinking is not judged by the application of a foot rule to its processes but purely by the results that he achieves.

A very striking example of the relative efficiency of large centralization as opposed to competitive decentralization is offered by the Standard Oil Company and by several other large corporations which were dissolved by the courts as "trusts." Most of these companies

were formerly managed in rigid fashion. The executives merely carried out orders. Whenever an emergency arose they wired headquarters as to what to do. In fact, the late George W. Perkins firmly believed that it was the telephone that created the big organization because without it the branches could not keep in constant touch with the home office. These corporations, after being officially dissolved and separated into their component parts, prospered so greatly that the total business done by the disjoined units far exceeds that ever done by the combination. Many people have inclined to the belief that this new prosperity was due to some sort of mysterious chicanery. They say that the Sherman Act is a joke. There is nothing mysterious about the process. The dissolution released a great fund of latent human ability that had previously been confined within rigid lines. It is entirely to be expected that the men, functioning for the first time on their own accounts, would apply all of their previously dammed-up energy to the extension of the new corporate units.

One of our very largest industries is now suffering acutely from too highly centralized an organization. It has had severe labor difficulties and will probably have more, and there is

a supreme dissatisfaction extending through the whole executive staff. Through travail a new organization will there be born.

What, then, do we really know about the organization either of a number of companies into a unit or of the executive work within a single company? The same general principles hold for both cases. It does not make much difference whether the departments are all under the one roof or under a dozen in so far as executive management is concerned. The reasons for distributing the work through many locations arise from economic causes—or by accident.

These several things we do know:

(1) That the one-man control is the best in the world if that one man is big enough to manage everything. But a business must be small, indeed, to permit one man actually to know and to supervise everything. The danger is always present that he thinks he knows when really he does not know. And naturally there is no permanency in this kind of management. If the one man is away or ill the business stops, and, of course, when he dies the business vanishes or has to be rebuilt.

(2) The one-man control is limited in scope; its scope is not extended by the imposition of a great amount of routine by which the results of all that is

done are supposed to come before the chief executive. Regulation will not substitute for management, and a business formed on the theory that regulation can do more than regulate is bound to fail. Where, by reason of routine, the affairs of the company do get back to the head and he makes all of the decisions on abstracts of the facts, he will violate the first principle of one-man management—that is, of exact knowledge. He will have to decide on theory instead of on facts—but he will think that he is acting on facts. The result will be a static, listless organization that is always waiting around for decisions to be made. There will be no initiative anywhere excepting at the top, and there will be frequent clashes of authority among the lower executives. For when a man's authority is closely circumscribed he will be always tugging at his bonds and trying to get on the next fellow's premises. The only object of routine is to facilitate operations that are mechanical—to free the mind from sequential detail.

(3) The one-man type is not preserved in the committee or board of managers style of administration. In this plan the heads all meet and decide the policies among them. The result is that instead of individual responsibility we have group responsibility and inevitably the kind of action which is known as "playing safe." A great difference exists between consultation on policies of general import and an attempt to manage on commonly-arrived-at decisions. The first brings results to the table for general inspection

and is of great value, for then each man is put upon his mettle; in the second the whole committee mulls through the whole progress of the business—although it must be obvious that they cannot all be specialists in every department of that business. Hence we obtain not the best that is in the men, but just the general average on which there can be an agreement.

Take these principles. Does it follow that there should be no organization? Should men just run on as they see fit? And should the chief executive have any duties?

The ideal organization is this: The chief executive is not an executive at all but a checker-up and inspirer. He properly should have no duties. His place is to see the results of each man's work and to discover what is wrong or how best the activity of a division may be increased, and then to see that the departments act in unison. He does not delegate authority: he reviews authority by results obtained. This throws the responsibility for results upon the under-executives, and, in the ideal type, each of these men has full authority in his own department. If he misuses his authority, it is not the fault of the plan but of the men: the wrong man is in charge, and it is the duty of the head executive to see that the right

man is in charge. Likewise, within a department the head will allocate responsibility—each man will run his subdivision within the general plan and be responsible for obtaining results. Every man in the organization will be, so to speak, on a piecework basis.

How this can best be arranged is to be decided on the facts. The big point is to divide activities and to place responsibility so squarely that not only will initiative, and consequently dignity, be built up, but also that the old game of "passing the buck" cannot be played.

With this type of organization the fullest in every man is realized, and there is no human limit at all to the size of the business. This is the new way of business. The centralization should come not in authority but in finance and research.

CHAPTER IX

THE USE OF MONEY IN BUSINESS

When a man in business needs money his first thought is to borrow it. One may find elaborate treatises on business finance in which the whole subject is approached as though in business we dealt with money as such. One might infer that successful business somehow grew out of creating marketable securities, or forming sound financial connections, or in some other way closely linking banking and business.

Let us take business finance out of the marble halls of banking and see if more real financing cannot be done inside than outside the shop. Let us see if an insistent demand for money is an indication of prosperity, or an indication of bad business management which has confused the functions of business and of banking, or, further, whether that management in a desire for easy money, has borrowed for speculation instead of for business processes.

It will not do to put down positive and invariable rules; each case stands squarely on

its own merits. This manufacturer may find that he is first of all a banker. He may find that his most profitable way of doing business is to lend goods over long periods. He may have a class of customers who want extremely long credits. Of course one might say that his proper course would be to educate these customers into the use of short credit, but that is the counsel of perfection. No reason in the world exists why he should not extend one, two, or three-year credits if, and this is the important point, he so organizes himself that the manufacturing and the banking phases of his business are not confused—if he remembers that he is appearing in two functions; first, as a manufacturer and second as a banker who lends goods instead of the money to buy them. His danger is in confusing the costs, the profits, and the losses of the two operations. Because the Germans worked out a right division of functions they were able to sell against all competitors in the long credit markets such as Russia and South America.

Again it may be the speculative feature that is of the highest importance. This is especially hazardous because speculation in materials is so often defined as "skilled buying." I know of hundreds of concerns with elaborate manu-

facturing and selling organizations that really depend for profit upon the ability of the executives to buy raw materials at a low price and sell them, slightly converted, at a high price.

The maker of a product in which the value of the raw material is high as compared with the value of the labor finds himself burdened with all the problems of making and distributing but dependent for his profits upon guessing the course of the raw material market. Most cotton goods manufacturers are in this position, so are the makers of leather belting, of automobile tires, and of food preparations. This entire class is apt not only to buy heavily against estimated needs in a rising market but also, when opportunity offers in such a market, to buy far beyond their needs in the hope of reselling the raw material at a profit. They thus mix the functions of manufacture and commodity speculation and, because they make more money in trading with raw materials on a rising market than in manufacturing them, they usually get so deeply into the speculative side that they are caught with heavy inventories when the market turns.

The wise speculators take their losses at once; the foolish ones, putting statistics against human trends, decide that the slump will be

only temporary. They attempt to hold their stocks for still higher prices until finally they can no longer sustain their extended borrowing capacity and are compelled to unload at a crushing loss.

There is nothing inherently reprehensible in speculation. In the end it promotes production and really equalizes prices over a period. The point is for the owners to decide whether they want to be manufacturers or speculators. If they decide that they are speculators the next decision to be made is whether or not it is economy to support a factory and a sales organization. They might do better to chuck those bits of trouble and take on a ticker service; why should a speculator have a high overhead?

Then we have the business which combines banking and speculation. The jobber often answers this description. A jobber is sometimes an industrial banker in that he finances both the small manufacturer and the retail distributor, but more often he is a speculator depending for his profit not upon a brokerage on the goods he handles but in buying them low and selling them high. Sometimes he has all of these functions. Likewise the retailer may be more of a speculator than a merchandiser.

Instead of putting his usual mark-up on a lot of goods that he buys at an exceptionally low price and thus getting a reputation for fair pricing, he may choose to put such goods into his warehouse in the hope that he can sell them later in a higher market.

Most of the dangers in business finance arise out of putting the speculative side above the fabricating or merchandising. It is just as dangerous for a corporation to speculate in goods as to speculate in the stock market; in many ways it is more dangerous because very few staple markets are nearly so well organized as is the stock market and hence one cannot often get so quickly out of goods as out of stocks.

The first policy, therefore, to be determined in any business institution is whether the strictly business or the strictly speculative feature shall dominate. One or the other should dominate; but often I wonder, in observing the demands of some concerns for money, whether their executives and bankers realize this self-evident fact. How often do corporations ask aid to help carry speculative purchases that are disguised in the statement of condition as "raw material," "goods in process," or "finished product?" I will com-

monly take a large inventory not as an evidence of forehandedness but as an evidence of possibly unconscious speculation.

The divorce of manufacture and speculation would go far toward the stabilization of industry. The present policy is unscientific. A manufacturer will commonly offer his wares for future delivery at a price which he arrived at by guessing the course of the raw material market. If, at the time of delivery, the price of the raw stuff has gone down then he will try, by curtailing production, to keep up the market price on the finished product so that both he and the customer may get out at the price quoted. Curtailing production further depresses raw material prices and opens wide the door to the man who has bought far ahead of his actual needs.

From time immemorial manufacturers have met in solemn conclave and decided officially or unofficially, according to the legal advice that they received at the moment, to maintain prices by curtailing production, but they have never made a nickel by so doing. Were it not that so few of them know the cost of manufacture and especially the cost of idle plants they would not cling to that ancient notion—

a notion that comes down from the days when plant investments were small.

So when we talk about financing operations of this sort, dignified as a rule under some phrase that contains a note or two about "steadying the market," we are not really having much, if anything, to do with business. We are rather finding satisfactory excuses for sending good money after bad. When a concern fails because of its inability "to carry" its inventories, frankness should compel a somewhat different verdict running more to the effect that the company had bet on the wrong horse.

The mixing of manufacturing and selling with speculation is the greatest of all deterrents to sound business practise and organization. It is the function of a manufacturer to manufacture, of a merchandiser to merchandise. They should look for their recompense in the results of the skill with which they perform their functions. Their profits per dollar must necessarily be small—and arduously earned. They cannot expect to become millionaires over night. It is hard for men pursuing this conservative course to see others come into the market and, without manufactur-

ing or merchandising skill, clear stupendous profits merely by buying low and selling high. If a market during a considerable period continues to rise one will find very few business men who are able to keep their heads and to remember that a day of reckoning is inevitable. Almost without exception they will cast aside the principles upon which they built business and engage in a mad scramble of speculation. We went through such a period following the war.

Business economics were thrown aside. Suggestions or rules for financing a mixture of business and speculation are not more useful than rules for beating roulette wheels. The way to finance speculation is to borrow all the money you can and keep on borrowing as long as you can. If, during the progress of the borrowing, you can sell your goods, then you can pay off your notes. If you cannot get rid of your goods and the banks refuse to renew the notes, then the approved course is to authorize an increase of capital stock and try to work that off on somebody. If there are not enough fools around to buy your stock certificates and nobody will take the goods off your hands, why then you are what is termed unfortunate, and you fail. If, in addition to being a

speculator, you are also blessed with a benevolent disposition, you will gracefully try to get your employees in on the stock subscription. This latter form of benevolence has not been wholly overlooked.

In the inevitable depression that follows a period of undue prosperity and speculation, the over-extended speculators usually fail. The survivors gather to learn what business is and to study the use of money in business instead of in speculation. But so deeply ingrained is the thought that business somehow depends upon money instead of money upon business that a deal of unnecessary attention is still devoted to getting money—when money is not to be had.

For instance, I found one large company badly in need of money—so it thought. But an investigation and study of their situation made it appear that what they needed was more method in the shop and less activity in the banking department. They had a goods-in-process inventory of $4,000,000; half-finished goods were everywhere in nooks and corners waiting for some department of the factory to turn out the missing parts. A thorough revision and planning of their schedule of output and a coordination of their plant cut down the

inventory to $1,000,000. They borrowed all the money they needed right from themselves not only without interest but with a premium in addition in the way of lessening their costs of production! They had been giving their attention to finance instead of to manufacturing. They had held with so many others to that compressed bit of unwisdom which is expressed in:

"Money makes the wheels go round."

Does it? And what of it if it does? That is not business. Business is not simply the stimulation of the motion of wheels; it is a result of the motion of wheels. The wheels going round make money. It is only in the unsuccessful business enterprise that money makes the wheels go round—or, putting the whole less cryptically, we may go into business because we have money (and undoubtedly we need money before we can go into business), but we cannot stay in anything that may properly be described as business unless money results from our operations.

The whole thought of business enterprise is clouded by failing to grasp the real part that money plays. We get to thinking in terms of dollars instead of in terms of goods. Manufacturing is only a process of converting goods.

At one end of the shop we take in raw material, add to it labor either in the form of handwork or in the form of machine work, which is only the previously accumulated hand work, and then turn out at the other end of the shop, our raw material plus all of this labor and try to make an advantageous exchange of this, which we call our product, for more raw material, and for food, fuel, clothing and housing, to recompense ourselves and those who have labored with us in the transformation of the raw into finished material.

Because the direct exchange of what we make for what we need is quite too cumbersome a process, we use, instead of the goods themselves, accepted exchange equivalents which we think of as money and which are expressed in terms of money but which, as a rule, are in the form of credit instruments—the bank notes of governments, or the promises to pay of individual institutions.

If we kept strictly to the practise of exchanging goods for goods, a proprietor and his workmen would not eat until the goods they made had been exchanged, unless at some previous time the proprietor had exchanged his product for enough food to build up a surplus to tide over the next trading period. In such

case he would not need any elaborate accounting to discover whether or not he was conducting business at a profit. His stomach and the stomachs of his workers would give a quick and accurate statement of business condition. The business man would be in exactly the same position as the Indian trapper who brings his pelts to the trader and receives return in kind, or of the small cotton grower who exchanges his cotton with the local storekeeper for such of the necessities of life as he cannot produce on his own farm.

Instead of this seemingly simple, but actually rather complex, process of trade, we first substituted the more convenient medium of money, but finding even that less arduous method of actual exchange of goods for goods too awkward, we have practically substituted credit in many forms, and it is the management of this money and credit which created that department of business which we term finance.

Finance, then, is not that which causes business but is only the management of the value representations of the various goods and services that go to make up business. This is simple, elementary economics—so simple and so elementary, indeed, that it would be unnecessary to set it forth as a background of finance

were it not that we have fallen into the habit of approaching business with the thought uppermost that it is money that makes the wheels go round. Then we quickly lose ourselves in a technical maze of financial principles expressed in financial jargon. One can be an extremely good business man without knowing the difference between a promissory note and a trade acceptance, or between a bond and a debenture, or between a bank and a trust company, or even between a bill of exchange and a check, or between a gold brick and a gilded brick. It is true that a capable business man whose mind was blank on these subjects might have not a little difficulty in retaining the results of his business capability, but most people have difficulty in doing that anyway and I am not sure that the man who is successful in business without the slightest knowledge of finance as applied to other than his own immediate concerns is not safer with his pile than is the equally successful business man who sets up later as a financier.

One of my friends who is a lawyer asserts that a great boom would come to the legal profession if only a book instructing every man on how to be his own lawyer would be widely circulated, for then a resurgent passion to dabble

in the law would arise and instead of simple and inexpensive cases the lawyers would have great and complex ones.

Because of this wrong approach, of this notion that it is money that makes the wheels go round, we find that those who have acquired a reputation for financial acumen in business get it as a rule because of a certain skill in borrowing money, which connotes an acquaintance with bankers and banking methods. These are valuable additions to the mental equipment of any man in business, but too marked a proficiency is apt to be evidence—as uncanny skill with a billiard cue is evidence of a misspent youth—of a misspent business life.

Any man with a pleasing personality, a knowledge of bankers and banking conditions, and a certain deftness in the formation of financial statements, can borrow money. If he extends his acquaintance among bankers he can borrow to meet his borrowings and thus acquire the essential reputation of meeting his notes. And he can do all of this honestly, for it is easy to persuade oneself that every cent borrowed will in time be returned. And then quickly and insensibly, one may be caught in the endless chain system of finance. This is a

soul-racking method of prolonging business life and depends solely upon being able to borrow increasingly large amounts of money. It is the certain road to ruin and only rendered more certain by the occasional earning of large profits that enable the over-extended margin of indebtedness to be cleared up. While borrowing to pay off former loans is at times inevitable, its necessity is always carefully to be analyzed. Adopting the Ponzi financial system is easier than one imagines. Not a few people have made comfortable livings out of borrowing money; but do not let us confuse respectable panhandling with business borrowing and do not let us get business borrowing out of its really very subordinate position in truly productive activity.

Business is not founded on financial dexterity; it is founded solely on the management of production or merchandising. If you call the roll of the great business men of the country you will not discover one who is, or was, preeminently a financier. They are superlatively skilful in either production or merchandising —never in finance. I do not recall a single business institution that was built by a financier. A. T. Stewart, Marshall Field, and John Wanamaker built as merchandisers· P. D.

Armour based his success on being able to get more out of a hog than the hog's anatomy could reasonably be expected to deliver; Carnegie was a maker of steel and a manager of men—so is Schwab; Gary is a manager of corporations; Ford is a maker of automobiles, and so on through the list. J. P. Morgan, who organized more corporations than any other man in the country, would never under any circumstances put a financier at the head either of a railroad or an industrial enterprise.

Money does not produce goods; goods produce money. The process of finance is, then, merely to see that enough money is produced through the exchange of the articles manufactured to pay for the purchase of new raw materials, labor, and depreciation of plant with enough over—that is, enough profit—properly to recompense those who initially ventured their money.

We have two general divisions of money in business—that which represents capital—the means of production, and that which represents goods in process. It is only as we confuse these two classes of money and confuse their relations to what we are doing that we get into financial trouble.

The part of the capital which is represented

by the means of production is commonly termed the fixed capital, while that which is involved in the goods in process is the working capital. The line between the two is not distinctly marked and their functions are so interdependent that neither is worth much without the other.

It has been the practise in the past to regard the fixed capital and a portion of the working capital as the stake of the owners and then to go out and borrow in a temporary way the additional working capital that may from time to time be needed, and it has been considered conservative, legitimate business management to borrow money whenever that borrowing will result in the production of goods that will turn into money and pay off the borrowing.

Take first the fixed capital. We are not concerned here with the legal organization or the nature of the instruments that the contributors of the initial capital get in return for their money except to point out that mortgage bonds or any form of obligation which puts a lien upon the property of the company and fixed charge upon the earnings are extremely dangerous.

The safety of a mortgage upon an industrial corporation has been overestimated; the in-

vestor should want earning power—not something he can sell. He does want earning power, but a mortgage often, in the early years, destroys the chance to obtain earning power, and so the investor gets only an opportunity to join in a reorganization.

A well-equipped manufacturing plant should be so special in its construction that it will have little or no value when sold at a forced sale. If it is large it cannot be sold anyway. It really has to be reorganized and the bondholder must get, of the securities issued in the reorganization, somewhat less than he held in the first place. The best financial plan is that which involves only common stock of no par value; the next best plan, and the one, for sales reasons, which is commonly adopted is to issue preferred stock, with or without a convertible feature and sell a certain amount of common stock in the same package.

But with this side of finance I am not concerned. The amount of the fixed capital—the amount of the total resource—which is invested in assets that have to do with production is the paramount concern. The plant has to be profitable and it cannot be unless it is fitted to its work. Its fitness is not to be arrived at by guessing. The factory itself will be built to

obtain a certain planned output in the most economical fashion. The plan will contemplate increases in productive capacity with the increase in market and these additions will go on as complete units—not in haphazard fashion.

The cost of plant will, therefore, have a direct ratio to planned sales; the sales necessary to operate the first unit to capacity will be known and additional units will be added only as orders over a considerable period give a fair certainty that the additional demand will be stable. It is hard to turn down orders in boom times especially when prices are high, but the wise financier will not extend his plant to meet emergency orders. Good manufacturing depends upon continuous capacity output—upon being busy in so-called dull times. Adding capacity to take care of the order peak means that normally the plant will not be running at capacity and hence will not operate with the planned economy and at the planned costs. After every boom period we see magnificent plants that cannot produce cheaply enough to find large markets simply because of the heavy fixed charges for idle plant. Or if the idle portion of the plant is not charged into the overhead it has to be taken out of the profits made

by that portion which is working with the result that profits are depleted to the vanishing point.

I am not advocating a cheap plant—I am urging the kind of plant that can turn out goods with the minimum of cost—the eventually, not the initially, cheapest plant. We base a new plant on the work it is to do—it is a tool and we need just the right size of tool and no other. We are setting out to do a certain job—to make a certain amount of product, and we expect to make it so well and at such a price that it can be sold. The amount that it will cost to buy that exact tool is hence known to us in advance and that will be the amount of capital that will have to go into the fixed division.

In the old plant the general rule holds—transform it into a tool for the work that it must do. Any plant that has not been scientifically designed, or in which the work and methods are not planned and the labor is not coordinated, can commonly be increased from 25% to 50% or more in capacity by the adoption of modern methods of routed work and instructed labor. I have assisted in cases where we have taken an old plant, rearranged the machinery, then installed a planning board, prop-

erly instructed the employees, and have not only decreased the cost and increased the volume of production but have been able also to lease part of the property that was formerly thought wholly essential. This gained an outside revenue which considerably decreased the burden of the overhead expense.

The point is to get everything into the plant that will lessen the expense of production and to get everything out that tends in any other direction. In short, the amount of capital to be tied up in plant and machinery is first of all an engineering and sales affair and only secondly a question of finance. If one has not the money to do the job as it should be done then the decision has to be made as to whether or not a compromise is worth while. The horse may pull through even if lame, but a wise driver rarely starts on a long trip with a lame horse.

Now we have decided on a certain volume of output. The tools to fabricate that output will cost an amount we have ascertained. The next point is to determine how much money it will take to send the materials through our course of fabrication—that is, how much money it will take to buy the various kinds of raw or semi-finished material that enter into our product,

to pay the wages of labor in the making, to pay all other charges, and to keep on paying until the customers to whom we have sold have paid their bills. This makes necessary a considerable number of important decisions. We will have to know what credit will be extended to us in buying and what credit we shall extend in selling.

Picturing the production of the factory as a wheel, a single revolution of which represents a day's output, we shall have to determine how many revolutions of that wheel will take place before we begin to be paid for what we do. We shall have to advertise, pay salesmen, and incur many and various sorts of expenses before, under the most favorable circumstances, we can expect to earn a profit. All of these expenses may be tabulated, they may be put into a budget and their sum will determine the minimum amount of working capital.

If the product and all of its processes of sale and distribution have been scientifically worked out the chances are that the company will make money, but just as a salaried individual is not to be considered in good circumstances until he has enough money in reserve to support himself for a year without working, so a company beginning business should be in a position to

call upon enough money to keep itself going through at least a year without making money. Although it is presumed that all of the plans will have been worked out with a maximum of human skill, that does not of itself absolutely guarantee success. One must be prepared against contingencies and be prepared to meet these contingencies not by borrowing but by the acquisition of additional capital.

We can borrow to finance operations but borrowing to meet depletions of capital or for any capital purpose holds within itself the highest danger; for we may thereby begin that endless chain system of finance that must end in absolute ruin.

I have given no figures as to the relative size of the fixed and the working capital, and it must be apparent that to settle upon any such arbitrary figures is only to assert that the business has not been previously planned and that its most important factors are being left to guesswork. Neither have I dealt with the borrowing policy because that is really a question of planning—not of finance. Neither have I taken up the case of the older corporation that finds itself in financial difficulties. The arrangement of its finances does not in the least differ from that of a corporation starting in business. And

finally I have offered no suggestion as to how to get along without money for the excellent reason that there is no such method—that is a question of individual genius.

The whole point that I want to make is that the management of finance is a question subsequent to and not precedent to the management of production.

CHAPTER X

PUTTING A BUSINESS IN BALANCE

A SCIENTIFICALLY planned and scientifically managed production department may do to a manufacturing concern exactly what a big, modern locomotive would do to a railroad equipped with 60-pound rails. We have about us a number of perfectly apposite examples. We have seen a number of large manufacturing corporations wrecked, or all but wrecked, by the pounding of the powerful productive engine that they installed. We would not think of sending out a high-powered racing car with only a child at the wheel; but we are content to let loose a high-powered factory under equally inexperienced guidance.

During the period when production was pressing, many companies organized their manufacturing facilities to a high scientific degree—and made no provision at all for the larger management. They thought the whole of manufacturing was production. They started production going but made no plan

either to sell or to finance the goods as made. They could run the machine on the straightaway, but they did not know how to make a turn. The sales fell off—that is, a turn loomed in the road. They did not know how to take that turn, and, of course, they crashed through the fence.

Here is a typical case: A number of rather prosperous manufacturing companies were brought into a combination by a moderately bright young man whose sole training had been as a salesman in a boom market. He had some money of his own and excellent family connections. He had never had the slightest experience in factory management or in corporate management, and his sales managerial experience had been confined to the direction of order takers. He put through the consolidation with himself as president. Then he hired —for every one of the companies was far back in its orders—one of the best production engineers in this country. He told the engineer that above all he must have a maximum output. On the books of the companies were orders for two years ahead.

The production engineer overhauled all of the factory methods, planned a schedule of production which increased the output by

nearly a half, and began the erection of a big, new, and expensive factory. The engineer was not consulted concerning finance. Nobody bothered about finance. The orders were on the books and they sold cash on delivery. So apparently there was no financial problem. Also with orders so far ahead there was no sales problem. The salesmen were, it is true, retained, and when not occupied with their social engagements, passed their spare time in receiving new orders and making excuses for the unfulfilment of old orders.

Then came the "consumers' strike." Instead of new orders the company's dealers began to get cancelations. The company insisted that its dealers should take allotments regardless of cancelations. The production engine worked swiftly and smoothly, and the dealers were filled to the brim as neatly and as quickly as though they had been bottles passing through an automatic filling machine. Then they could take no more.

The president did not know what to do. He had never thought of anything like this happening. He reassured himself that the public would be back to buy. The salesmen likewise reassured themselves. Nobody did anything excepting reassure himself. The vice-president

in charge of production was there to get production and not to sell. He kept right on getting production and by the time the sales and financial executives had finished reassuring themselves a tremendous finished inventory was on hand, a tremendous parts inventory was on the way, and the banks and supply men were calling for money. Of course there was nothing to do but shut down and turn the company over to an informal creditor's committee.

The company had planned its production for a hungry market and it had no plans whatsoever once the market changed. It had not been planned as a business—only as a goods producer. That is only one out of a dozen or twenty similar cases and I give it only to emphasize that business does not consist solely of production, and that planning does not mean only an arrangement of charts, boards, and schedules in the manufacturing department.

Through the war years we specialized in production. First the war orders and then the peace orders demanded such quantities of goods that manufacturing became solely a question of getting goods through the factory. The sales department had practically nothing to do. The financial department, whenever money was needed, had only to go to the bank

and get it. The term "scientific management" was restricted solely to shop management.

The usual course of a proprietor was, when he found his orders running far ahead of schedule, to call a meeting of his executives and as a result hang up prizes to the workmen for production. Usually he got increased production over a week or two; then inevitably he got a reaction, because whenever a worker spurts he must afterwards take a breathing spell. While the reaction was on, the proprietor, in despair, sent for the production engineer as he would have sent for a doctor. He asked the engineer for more output. He engaged him for this single task and if the engineer were professional enough to suggest that the factory was only one part of a scientifically balanced business, the proprietor quickly put that engineer in his place. So it happened that many high-production units have been built up and delivered into the hands of men who had no idea at all as to how these great engines should be regulated and controlled.

One heard that production was the goal—that the object of business was to produce goods. We had a lot of such talk. Then all at once this was replaced by talk of "over-production." Now it is often stated with great

confidence that too much stress has been laid upon production and that, in consequence, the productive capacity of the United States had grown far beyond the consumptive needs of the people. Therefore we may expect at the most to be able to run our plants through not more than three-quarters of any year for domestic consumption, and, unless foreign trade be largely built up, industry, together with its managers and workers, must expect to live on short rations.

Production is not of itself the entirety of business. The United States can readily absorb all that it rightly produces. It is not wise to absorb all—but that is another matter.

We can regard production as the sole end of business and with ease over-produce. Also we can take a No. 8 shoe and after vainly trying to put it on a No. 12 foot can announce confidently that shoes are not made for feet. Business is founded on production but a house is not built when only its foundation has been laid. A business which has developed only its production—that is, has acquired only the ability to get goods out of the front door, regardless of price, is no more to be regarded as a business than is a foundation to be regarded

as a house. Indeed, such a business is as much a menace to the community as is an open, unguarded foundation. Production is the beginning and not the end of business. It has not been unduly emphasized. It has not been emphasized enough. And the other equally important parts of a business machine have commonly been, as is natural in a rising market, not emphasized at all. We have had production for itself instead of as part of a well-ordered plan of operation.

The end of planning is not the installation of chaste, metal fixtures filled with neatly lettered cards. The end of planning is so to shape the manufacturing, selling, and financial portions of a business that all will function perfectly together, and the business cycle of that particular institution revolve with sweeping grace.

An unplanned business may be said to lack orchestration. No matter how individually skilled the members of an orchestra may be, their efforts will go to make business only for the undertaker unless some one has reasonably adapted the score to the instruments. Otherwise they will not make music but only a frightful noise.

But what is the use of talking about business

as though it were grand opera, or even as though it were comic opera, when the plain fact sticks out that every now and again people will not buy? What is the use of having all the instruments in perfect harmony if no one will pay money to hear their sweet sonance? Who, under these circumstances, will pay the pipers? Why get so much dressed up without any place to go?

It is taken as a fact that demand and supply ebb and flow unceasingly, that what are called "business conditions" are as inviolate as the seasons, that we can never make our conditions but must always accept them as they are given to us. That is the usual view notwithstanding the fact that irrigation has disturbed the reign of the cactus in the Southwest, that Burbank induced oranges to bunch their seeds, that lovely colors can be gotten out of messy coal tar, and that the people of the United States accepted the Eighteenth Amendment. Civilization consists in man-handling rather than pan-handling nature. Therefore, although it is not desirable to play tricks with the law of supply and demand (which is the usual way of attacking the problem of business continuity), it is perfectly possible, although not to be done in one night and without quite a little thought,

to plan one's business so that it will furnish the supply and make the demand.

Supply never exceeds demand. If, for instance, the South has a bad cotton year the residents of the cotton states will not buy many shoes. Their turning away from the purchase of new footwear is not due to any sudden hardening of the feet making the use of a leather covering unnecessary. They do not buy shoes simply because they have not the money to buy them. And so it is with everything. It is not the demand that ceases; it is that the supply has gotten too high-priced for the demand. The seller of shoes, the maker, the workers with him, the tanners, the dealers in raw hides—in fact everybody involved—insensibly, perhaps, forgets his own proper contribution of service to the eventual result and tries to find out what a man will pay for shoes. Prices advance all along the line and they keep right on advancing until the consumers, at first individually, and then collectively, find that the prices being asked are more than their pocketbooks care to pay. The supply for a time continues. We then have an over-supply and a period of restricted production. Finally, after much wailing, the whole machinery of price advance goes into reverse gear and creakingly,

with showers of sparks and a considerable breaking of cogs and snapping of belts, the whole thing backs down the hill.

It is the part of management to manage. It is the part of science to overcome difficulties. Anybody can accept things as they are. Unscientific business—that is, unplanned business—accepts things as they are. The unscientific business man accepts good times with perhaps a tendency to give full credit to himself for bringing them on, but anyhow he is glad. Also and eventually he accepts bad times as an excuse for lack of forethought and he is sorry. The banking thought, for instance, places a great deal of dependence upon conditions; and business men are, and really have to be, considerably influenced by their banking connections. A banker is in the way of being a photographer who cannot arrange the position of the sitter. He cannot properly be constructive. He is a snapshot maker—an appraiser.

The banker bases his views largely upon the state of the raw commodity market. Until quite recently bankers really knew only raw materials, and the bulk of the commercial paper that even now is offered is founded upon trading in raw or semi-finished material. Raw material fluctuates in price and it is not desirable

to attempt to control prices, for any workable control has to be based upon the expenses of the highest cost producer. That is the objection to monopoly. A monopoly is not wrong in itself but it always tends to decreasing production because it arrests the progress of ingenuity by saying definitely, "This is cost and this is price, and thus they shall forever remain."

For instance, salt was once rather generally monopolized in Europe and therefore salt was low in quality and high in price. A monopoly is anti-social in that it retards progress and is therefore self-destructive. Where a common raw product can have a locality specialization then prices may be intelligently and remuneratively controlled to the benefit of both the producer and the consumer. Being merely a locality product the danger of too high a price is avoided by the disposition of the purchaser to buy some other brand whenever the specialty threatens to become a luxury, and since in a locality fairly uniform costs may be arrived at through fairly uniform practises, the high-cost producer is not a guide. The California Fruit Growers' Association has handled this situation with considerable skill. The supply and price of oranges are more uniform than in the

case of any other fruit. The fruit growers eliminate speculation and instead of throwing their product heedlessly on the auction block, carry it themselves, through a widespread organization, almost to the consumer.

We are not here proposing a plan for the complete regulation of the world. There are enough such plans around already. The insane asylums are full of them and we have always with us and at large the Socialists, the Communists, the Syndicalists, the National Guildists, each holding to certain basic principles and each proposing certain basic remedies with individual slants of infinite ingenuity. They all start, although not ostensibly, with the notion that human nature not only should be, but can be, recast. They form what they call an ideal conception of society, and love to think of themselves as idealists. As a matter of fact their ideal does not go beyond the stomach. All Socialistic or radical conceptions of society are based not upon the joys of creation and competition but upon the delight which cows are supposed to feel when dwelling in succulent pastures. They would deny that the world is necessarily a struggling sort of a place. Starting with this false promise inevitably they end with a country that is regulated—but not alive.

It has been fairly well demonstrated that the plan of operation of the Russian Soviet Republic would function perfectly were it not for the fact that there are human beings in Russia. As it is, the plans do beautifully and the people starve to death in proportion to the attention that they pay to the plans.

What I am proposing is not a theory that disregards the world and its inhabitants, but merely a rationalizing of business and an application to it of a reasonable amount of common sense. We cannot divorce business from nature any more than we can divorce life from death. But we can so regulate our business affairs just as we regulate our personal health so that a slight ailment will not necessarily develop into a serious one. We can apply preventative business science just as we are beginning to learn to apply preventative medical science. They are now beginning to learn that medicine when introduced into the human system causes a chemical reaction. They are on the way to the study of these reactions to the end of preventing maladies instead of curing them.

That is all I have in mind here and on each point I have a test of actual experience. I want to arrange and present knowledge and find out

meanings and reactions. Perhaps this is not practical. If it is not, then the best pharmacist must be one who makes up prescriptions with his eyes shut and learns whether he is right or wrong only by the condition of the patient after taking.

We can, but not without difficulty, divorce a single-unit business from general conditions. We can join all of the units engaged in the same kind of business, in a locality, and somewhat more easily make them independent of conditions, while we can take a national business and to a considerable degree make prosperity permanent with it. But we can do none of these things without comprehensive planning.

Let us take first the individual unit. Each man is most interested in that which intimately concerns himself. If later he joins a combination it will be only because the fruit of combined effort promises to be greater than that of individual effort. We do not have to bother with altruism. Altruism is commonly practised at the expense of customers or creditors. We are going to plan to make money—not to make a killing or anything of the sort, for that is not business. The brigand eventually gets

shot or goes to jail, and so does the business that thinks of itself as a Robin Hood. We want a steady profit, year in and year out.

The first question to be settled concerns what we are going to do. What are we going to make or sell, or make and sell? That seems to be a ridiculous sort of question, especially if we are already in business. Why ask it? Because we must, before we can plan anything, settle upon a business policy. Shall we manufacture and sell, or shall we speculate? No one questions the dishonesty of sending stockholders' or perhaps creditors' money down to Wall street to play the market. But if we make "favorable contracts" over long periods—buy in excess of needs in the hope of being able to get a better price on the sale of the finished article on account of the advance in raw material—then we are as much putting our money into speculation as though we had frankly dispatched it to the market.

We have to choose our method of business. If we intend to make an article in which the value of the labor is low and the raw material high, then we can choose either to pass on the goods that come to us plus a small charge for our services, or we can regard our actual serv-

ice as of no moment and choose to stake our chances of success on buying low and selling high.

The latter is a perfectly legitimate business policy but if we follow it we should not hold ourselves out to the world as a manufacturing concern, or ask people without a full knowledge of what we are doing to risk money with us, and we must be prepared always to have at hand large sums of money in order to cover ourselves in declining markets. As I have already said in a previous article, one must decide whether it is worthwhile to organize for the manufacturing fee when the real object of the organization is to make money out of commodity speculation. Certainly it is not worthwhile to put a great investment into plant or equipment. It is not worthwhile, for instance, to invest some millions in a department store and depend for profit upon speculative buying. The most successful department stores in this country do not carry large inventories. They do not hope to buy low and sell high—that is the hope which a large inventory expresses. They are content to buy at the lowest price that the market offers, almost from day to day—to buy only that which they know they can sell, and to sell it at the buying price plus a

merchandising fee. If the decision be to make money by skilful or lucky buying and selling, then the plan of the business may be simply stated. It is this:

Keep down the fixed investment to the lowest possible point. Keep a large and instantly available reserve fund in cash or convertible securities, and regulate your buying so that you will not buy beyond the ability of the money that you have in hand satisfactorily to margin your stock if the market makes a set against you. It is possible in straight manufacturing or selling to get along on a shoestring but successful speculation requires a lot of money, and it is suicidal for any man not in the capitalist class to attempt to speculate in commodities. We often say of a bankrupt:

"Poor fellow, he did not know how to buy."

Usually we mean that he bought too much at too high a price. Just as in the stock market the small man comes rushing in to buy at the top of the market and then drops his all when the turnabout comes, so the small merchandiser comes in on the top of the commodity market. He buys most lavishly when prices are highest for then he has money; he has made money on an ascending market and flushed with speculative profits, comes in for a killing—and is finan-

cially killed. If he had bought according to his needs, he would never find himself with a stock that he has to sell for less than he paid for it. It is not always his fault; speculating manufacturers urge purchases on an ascending market. They have not the foresight to plan ahead; if they did they would know that their retailers would prosper only as they kept out of speculation and kept in merchandising.

In our discussion of business planning let us assume that we expect to make money out of the service we render and not out of luck. We shall take for granted that money is not to be made by accident. We hope to be able to take advantage of fortuitous accidents. We hope to plan for success and that involves the correlation of manufacturing, selling, and finance so that a jam may occur nowhere.

In the house of the New York Yacht Club there are many models of ships, most of them built before the ships themselves were built. These models are of great use in enabling the designer to alter certain improper features before he actually starts work on the boat itself. There are such things, as an instance, as different sets of rigging interfering one with another unless carefully laid out. A ship with a slightly wider beam or a slightly higher mast

would throw the rigging out of line. Some of these things would not be discovered unless worked out on the model. They try these models in tanks and learn what the boat will do.

Planning for business is on the same principle. If you think a thing over you can consider it item by item, but you can seldom get a collective picture. When, however, you try to build a model—a plan—of what is to happen, you will find gaps and lappings and interferences. Then you can redraw your plan.

We have discussed labor and selling and cost accounting, but I know of nothing that will make more money for a business man than properly to plan, for planning is, after all, the basis of all other functions. I have seen the best of workmen without work because it was not known in advance that some apparently unimportant condition would prevent a job from reaching the group of workmen concerned. I have seen machines worth thousands of dollars held on the assembly floor because screws worth a nickel each were not on hand. I have seen companies go bankrupt because they could not get money, and yet on their floor they have had two or three times the amount of stock tied up due to improper planning.

Planning, therefore, in advance lays out the

work for the workmen so that there will be no waste of his time; it discovers a lack of raw materials before the materials are needed; it causes the making or sharpening of tools before the machinery is ready to work. It tells the owner where there will be idle machines so that he can go out and sell work for those machines. A real planning department that handles everything properly deals with the things that must later happen in the actual plant. Through the various little cards, indexes, hooks, etc., representing raw materials, tools, machines, etc., the planner can visualize the shop within the small area of a planning room. He not only visualizes the shop—gages the speed of the engine—but from the production knows in advance what must be sold and the amount of money needed. The plan in effect rehearses the business performance that is about to start.

We have already decided that we shall not speculate—that we shall buy only what we need and in such time that it will be on hand exactly when we do need it. In merchandising the amounts of these purchases will be guided by the sales that we determine to make. We have here to do more largely with manufacturing; merchandising is guided by a few general prin-

ciples and a multitude of detailed applications.

Manufacturing may be of three kinds:

1. Job work in which each order is special and only a comparatively small amount is to order.

2. The continuous repetitive production of a single type of article.

3. Quantity production to the customer's order.

The second of these three types of manufacturing is the most economical for the patent reason that if we do only one thing we can so regulate our tools and our progress of work as to do each operation in the best possible way. The automobile industry is the most apparent application of this one-product-repetitive-operation plan. The best results are obtained from a highly organized plant with a high machine overhead that divides into a tiny unit overhead on account of the speed of manufacture.

This being the ideal of manufacturing, the thought in planning the conduct of a business is always towards standardization and the introduction of the largest possible number of repetitive operations. For repetition eliminates waste and hence permits of making at such a price that the demand may be kept

fairly constant. Therefore, although most concerns will find that they are offered diverse kinds of business, it will be necessary in the planning of production and sales, in order to secure continuity of market, to restrict operations to those articles which can be the most economically made. It may not be advisable to make only one article but if more than one article be made, then each should be made in what amounts to a separate shop although all may be under a single roof. Hence, as I have explained in a previous article on factory building, the second and the third schemes of manufacture are essentially alike or should be made essentially alike.

The first, or jobbing business, can be brought into the general idea of standardization or it can be frankly jobbing and depend for continuity of work upon the craftsmanship which it exercises. The standardized process of manufacturing either turns out a special trademarked product that no one else makes, or takes a common product and by superior and economical process makes it special. No continuity is to be expected without a personality of some sort being paramount in the goods. The breakfast food makers, the biscuit makers, the tool makers, the automobile people, all give

examples of personality in goods; the danger is that in prosperous times the personality may be forgotten and the product rushed out at a high price because unnamed products are then high in price.

One of our leading perfume makers did not increase the price of his perfume, toilet waters and powders at all during the war years; his costs ran up but he improved his manufacturing processes and taking a smaller unit profit made a large total profit on the increase in sales. Consequently when the slump in general business came he was not touched; the people knew that his prices had not gone up and so they did not wait for them to come down. His business has moved on a steadily rising scale and has not been affected at all by "conditions."

The job man is apparently not so fortunately situated as the high-production man; he makes specially or sometimes merely repairs and it would seem that he would be outside of planning and be wholly dependent upon the whim of the purchaser—it would seem that he could not make a necessity out of himself. But his work can be planned and he can trademark himself in effect by the quality of the work he turns out. His establishment should be compara-

tively small for in order to get the best results the actual personality of the proprietor should at all times be in evidence; he should be there as the living evidence of craftsmanship. It is possible to introduce a kind of broad standardization in jobbing—the automobile industry is considering the establishment of repair shops on the production basis and specializing the work that they do. In that case repairs will move from shop to shop just as cars do in their original building. And in any sort of repair shop it will always be a policy to determine in advance how broad the scope of operations shall be.

If the scope be large then the machinery should be neither special nor expensive so that the plant can be laid up if necessary without the accumulation of excessive overhead.

Take quantity production. We have our plant planned to make a certain quantity of goods at a certain price; that is the amount that we have to sell. Then we must plan our sales to dispose of this amount. It is for the sales department to fix quotas, methods and advertising to dispose of this amount—no more and no less. In the sales are included credit terms.

With the production and the sales fixed we

are in a position to calculate with nicety the amount of money that we shall need. We know that in our production scheme we shall have in hand an inventory of raw materials or parts that will not exceed a certain amount, and we know that if our sales are managed according to schedule we shall never have more than a certain finished inventory. The money needed to carry these inventories and to pay the labor and overhead expenses is simply calculated. The money requirements can be charted through the year. Our business may have seasons and the inventories will rise and fall according to the seasons; that will appear on the financial charts. We extend credit upon a certain basis; that means that with perfect collections certain sums will be coming in while others are going out, and these, too, may be charted so that we shall have two financial lines which will or should cross at one or several points during the year, thus marking the points when we have cleared our indebtedness and made our profits.

But, of course, we will not have perfect deliveries to us of raw materials, nor will our finished product always go out on schedule. Therefore, we must allow a percentage of money for emergencies in addition to the

planned needs—reserves against contingencies.

In effect we have thus a budget; if we increase production we must provide money increases all along the line, and also increase our reserves. Much of the difficulty of the automobile trade in particular was in increasing production without making plans for the sales of the product and the reserve financing in the case of emergency. An increase in production demands a corresponding increase all through the plan and that is why production, which is the life of business, may also, if let run amuck, destroy what it would create.

CHAPTER XI

CONTROLLING YOUR SOURCES OF SUPPLY

Go down almost any day to the lower waterfront of New York City and you will find block after block of stalled trucks and wagons. As an exhibition in the history of vehicular transportation it is most interesting. You will find splendidly equipped motor trucks, many of them with detachable bodies so that the expensive chassis need not be held idle for loading or unloading. You will find trucks with their capacity enlarged by trailers. You will find fine teams and also you will find one-horse wagons and perhaps you will come across some carts. In fact, on a good day, you are apt to run across specimens of nearly every kind of goods vehicle that has been used in New York within the last century.

The exhibition draws interest from a great many angles. These trucks and wagons may be in line for a chance to take on or leave a load at a steamship pier—they are waiting around for work. Or again they may be in a

headless traffic—victims of that misplaced energy that tries to put two things where only one will go. In any event they are doing nothing necessary or useful. They may waste a couple of hours or they may waste a couple of days, and, because they do waste so much time, it commonly costs more to move a parcel from a New York dock to an uptown warehouse than to bring it from China to the dock.

But the point is that in such a jam the most efficient vehicle is that which is the least efficient carrier. It is less expensive for a horse and cart worth perhaps $100 to hang around doing nothing than it is for a $5,000 or $6,000 truck to do likewise. It is perfectly possible to avoid these costly waterfront jams. The police can prevent them and, when the city puts in a little more management and spends a little money in arrangement of loading platforms and the like, there will be no more waiting or jamming. The big truck and not the little cart will be the cheap carrier of goods. With a vehicle doing more waiting than working, the one that costs least to wait instead of the one that costs least to work is the more efficient.

We have a good deal the same situation in the organization of manufacturing—which in previous chapters I have discussed. The theory

has been developed that manufacturing can be and ought to be rather an exact science and can be and ought to be rather an exact service, and that the reward of the proprietor of an establishment should, and eventually must, be determined by the character of the service that he renders. This, taking service as the ability to make a large addition of value at a small addition of cost, means that the highest service can be rendered only through standardization and a complete planning of operation from the source of raw material to the final purchase by the consumer. In planned, standardized, repetitive fabrication the machinery and the management form very large parts. Both the tools and the men are expensive unless operated to full capacity—then they become very cheap indeed.

All of this has been sufficiently proved in practise and also it has been proved that it is these finely balanced institutions that suffer most in the kind of traffic jam into which business every little while gets itself.

For the purpose of not doing business nothing can approach the old-fashioned shop and if business is a now-and-then affair it ought to be organized on a now-and-then basis. A man ought to be ready to get in and to get out

quickly. He should have only a light kit—and study the agility of the yeggman.

But there is no reason that business should get into a jam. There is no reason why a number of vehicles cannot go to a wharf and take away the goods that they want without spending most of their time falling over and cursing each other.

We cannot prevent cloudbursts or bad crop years, although it is beginning to be discovered that we can do a great deal to render them harmless, and so we cannot separate business from nature. Neither is it desirable that we should do so. One of the difficulties of so many reform movements is that because it is possible to modify or even to thwart nature to a degree, a whole theory is built upon thwarting nature. This is not more reasonable than insisting that the time for eating strawberries in the northern states should be January, because it is possible with a great deal of trouble to raise moderately satisfactory strawberries for eating in January.

It is not necessary to change the face of nature in order to avoid traffic blocks in business. But it is necessary to use management. Just as one section of management or planning has to do with the work as work and the sales as

sales so another has to see that the business as a business does not enter a street that is already full. These somewhat cryptic remarks will shortly have an explanation. But it will help to remember that the expert planning of a single business, although it will stabilize profits and take the whole out of the common run, will not, without more, render it but slightly susceptible to general business and labor conditions.

The most finely planned and finely equipped business unit may easily get into a more expensive jam than its ill-equipped fellow.

Each business is interdependent. A unit cannot exist quite alone; unless it can plan and therefore control the source of its raw materials and the final disposition of its products, it may get jammed and be no better off for the time being than the ill-planned business.

The principle that a manufacturer shall contribute a service and simply add the cost of that service to the value of the raw material, thus keeping his prices consonant with the buying power of the public, will have little force if somewhere in the processes before him or in the processes after him, the speculative element so controls the situation that he cannot function on schedule. Then he and his splendid

vehicle are worse off than the fellow with the horse and cart who can sit and smoke and take the air.

For instance, in the parlous closing months of 1920 a good many manufacturers who were equipped to do business on a low-cost scale could not operate. Some having previously found it somewhat cheaper to buy semi-finished material rather than wholly to convert the raw material, discovered that the people ahead of them, the people from whom they had been accustomed to buy, were loaded with high-priced material and were hoping to hold prices long enough to get out. Thus the manufacturer had his way blocked to the source of raw material. He was physically prepared to manufacture and sell at a price that people would pay but he could not do this if he had to start with high-priced, semi-finished material. Many of the textile people who did not spin their own yarns found themselves in exactly this position. They were ready to do business but for some time they could not buy yarn at a price that would let them do business.

Other manufacturers who did not have this particular disability and who could get raw materials at the prices they wanted had been accustomed to obtain their distribution through

jobbing houses. Some of these jobbing houses were filled with high-priced goods—because a jobber in nine cases out of ten must make his living by speculation—and the jobbers were waiting around to dispose of their expensive stocks before they took on new stocks. The speculators on both ends of the process of conversion eventually had to take their losses and touch earth but in the meantime the man in the center suffered deeply.

As I pointed out in a previous chapter, those concerns which came through the depression almost without knowing that there was a depression, were those which kept the whole road from raw material to ultimate consumer open.

There has been also in some institutions—in fact in a majority—a clogging of productive ability through ineptness in adjusting labor costs and here we have seen some very foolish and ill-thought-out expedients. We shall see in a moment how this classes with material and distribution. The most extraordinary and at the same time the most usual plan has been not to touch wages, which have been curiously considered as something apart from instead of a part of production, but to keep wages at the old rates and operate through only a part of the week—thereby making as certain as a hu-

man being well can that the finished product, if sold at all, will have to be sold at a higher instead of at a lower price than previously!

It is not, as so many kindly disposed souls think, a help to the wage earner to try to preserve for him a wage that is not expressed in production. It is the part of management and of skilful planning so to regulate the work that a high wage may be paid. The management which does this gets the pick of the workers. But a wage cannot be divorced from work. A company that has properly conserved its surplus and has adequate cost accounting methods may, running on a part-time basis, charge to the product only so much of the overhead as the working hours actually consume and charge the balance against the contingent fund established for the purpose. This cannot be done forever.

Let us remember our principles. The company cannot exist unless it makes an adequate charge for service—a fair profit. If the officers think that it can pay high wages that mean an added charge to fair cost then they are simply deluding themselves. Fortunately in comprehensive planning, the human element, that is, the wage earner, has a part with the management and can aid in determining what is the

least unsatisfactory wage. A speculation in wages no more than a speculation in materials can be allowed to clog the highway of commerce.

No sum of money paid for anything can ever be wholly satisfactory and we have to reach every conclusion by a series of compromises. The wage earner, because wages are so mobile and he is so near the source of production, has his wages go up somewhat ahead of general retail prices. Because of this same mobility they also begin to fall ahead of a fall in general retail prices, just as they rise ahead of prices. He has a good inning followed by a bad inning. The fixed salary man has a bad inning followed by a good inning. So, as a rule, the sum of dissatisfaction does not much vary. In the perfect state, of course, we shall not have these individual dissatisfactions, for then we shall have bureaus controlling the sun and the winds and thus wholly eliminate the playful cussedness of both nature and human nature.

However, we can, without drawing on the realm of the infinite, attain an average of minimum dissatisfaction with wages and maintain a satisfactory and regular forward business progression, if only we organize to gain these

things. The organization may perhaps be complex in statement but, divided into its several parts, it is, in fact, rather simple and can be attained by a combination of elements and practises which have already proved themselves in practise. We can put together the good things that we know.

The stumbling block is that, although you may be entirely familiar with what can be done in each branch of your business, to do it may require millions of dollars where, perhaps, you have only thousands or hundreds of thousands. It is easy enough to talk about keeping the road open, but that requires money. It may be cheaper to take one's chances with raw material than to attempt a control. Usually it is. And as for establishing a direct line to the consumer that, too, is not only very expensive but involves a kind of knowledge that even the best manufacturer will hardly possess. So what is the use of talking about these things? Only this. The big companies can do these things. If the smaller company cannot then the day of the small company—of the small business unit standing alone—is over, in so far as the production of those things which may vaguely be classed as necessities is concerned.

The small corporation is uncommonly useful

and forms a necessary part of our life but it cannot exist in competition with the large corporation and there is no reason that it should.

Take a familiar example. Some of the makers of automobiles do not manufacture bodies. They find it cheaper to buy from large concerns that make only automobile bodies. Such concerns make standard bodies very cheaply and very well but they cannot undertake, except at a prohibitive price, to make a single body to a special design. A few blocks away from this big factory is a small factory that also makes automobile bodies. The small factory may decide to compete with the big, efficiently-organized, powerfully-financed company. It will find that it loses money charging prices which the big company would consider high. The owner of that small factory may write to the Federal Trade Commission or he may start a campaign of some kind, or he may do a great deal of talking about grinding monopoly. But if he is sensible he will not attempt to compete with the big company. He will go to the making of special bodies and, while using all possible manufacturing economies, will throw into his work the ultimate of craftsmanship and, instead of quarreling with conditions, he will make his own conditions.

So while there is no place for the small company in the manufacture of standardized articles there is a very large place for it in the making of patented specialties or articles which have certain of the indicia of craftsmanship or which are really craftsman's products. Between these two fields of effort there is no competition—for art and its near relatives do not have market prices. I do not recall that the Rogers groups killed the sculpture market.

We are here concerned with the standardized repetitively-made product and in this the comparatively small company cannot hope to exist alone; because it is small it cannot control both its sources of raw materials and the marketing of its products.

But it can combine with others to secure that control. And that is why projects which require millions can be discussed by those who may have only thousands to spend. The individual can go into crafts production and remain individual; but if he goes into standardized production he will be forced to cooperate or coordinate with others. We can have the full benefit of the largest corporation without having a single legal entity.

Look at the several forms of big business—some big by letters patent and some big by

voluntary association. There are many forms of combination and I can offer none as ideal. There are no ideal examples of anything—the human element has always to be considered. No organization will run just because it has a good set of plans; some one has to put the plans into operation.

The first form of combination is that exemplified by the United States Steel Corporation. This company goes back to the sources of the raw material and is in every respect entirely independent of the market. It mines its own coal and ore, usually transports them in its own cars, and sends its own products overseas in its own ships. As is well known, this is a combination of a large number of previously independent companies. Very few of these companies have, however, retained an independence in other than perhaps a strictly legal sense. There is a distinct tendency toward over-centralization, but, without going into details and remembering that this is a human and not a super-human organization, it must be evident to every fair-minded person that this corporation has not only been of remarkable service to the country but has served its stockholders equally well.

It has been able to preserve at all times its

own prices. When the demand for steel was very high the company might have followed the example of the so-called "independent" companies and sold to the highest bidder. It, however, chose to maintain what it believed to be a fair price and preserved all its contracts and its contacts with the result that, in spite of a large and mostly unfair drive against it by a radical section of labor masquerading as a conservative section, it went through the reconstruction period almost without observing that there was anything to reconstruct. It found itself running close to capacity when the independent companies that had charged high prices were being forced to shut down. It could and did control the price of its product. No outside force could anywhere interfere with its plans.

There is, of course, a public objection to a large corporation founded on the thought that because it is large it is also a monopoly and will want to squeeze the small manufacturer. We are not concerned with this. The kind of mind which directs a combination to raise prices is the kind of mind which races to its own destruction.

The next form of combination which effectively covers a complete field is shown in the

General Motors Company and the Allied Chemical & Dye Corporation.

Take the General Motors Company. This is a combination of a considerable number of motor car manufacturing companies, parts makers, body makers, and, in fact, of all that enters into the automobile excepting the tires, and of some allied industries for stabilization such as tractors and lighting appliances. At a favorable time probably tires will also be included. This company does not go back to the raw material. It buys its metal. An automobile is largely labor and the price of the raw material is not of the highest importance—not sufficiently high, in fact, to warrant the extensive expenditure required to go back to all of the sources of the numerous kinds of metal.

The peculiar part of this corporation is that many of the units are competitive and the company has seen fit in order to encourage individuality and initiative to preserve this competition through separate selling forces. The union is in finance and in engineering management. The ordinary automobile factory sells either directly to the consumer through branches or controlled agencies. It has a contact with the consumer but is commonly more an assembling than a complete making unit and

thus has not full control over all that enters into the finished product. A shortage of parts supply or bad manufacturing methods at only one point from which they draw supplies may wreck all their plans. General Motors is organized to control all that it uses excepting the raw material and there the risk of becoming involved is less than the risk of taking on a very great new line. We organize against only the ordinary business risk—not against any and every eventuality.

Another good example of natural combination is the Allied Chemical and Dye Corporation which is a merger of five non-competing companies: The General Chemical Company makes heavy acids; the Semet-Solvay Company has by-product coke ovens; the Solvay Process Company makes alkalis; the Barrett Manufacturing Company takes tar as a base and makes various products—it buys much of its tar from the Semet-Solvay Company and its acids and alkalis from the other two companies; the National Aniline & Chemical Company makes dyes and uses the products of the four preceding companies. Going round the circle each company depends for something upon one or all of the other companies. All of these companies are large. They combined because they

were complementary and by combination they could have the benefit of a very great financial power and of a more extensive research department than any one company could afford. The companies themselves each preserve the old identity and lose no individuality. There we have a splendid example not only of getting back to the source of raw materials but of organizing to use every possible waste and by-product. What one company might throw away becomes a starting point in the operation of the next company.

But still what have these great corporations to do with the individual who is hunting for business, who is hunting for a way to make his own business better? He has not a hundred millions or so to spend for organization. He is not looking for a chance to invest money—he wants to make money. He can say most effectively:

"I am just as much interested in comparing the Steel Corporation or General Motors with my own business as I am in comparing the size of my country plot with the recently calculated size of the star Betel-guese."

No, I am not suggesting that as a preliminary to better business each manufacturer go out and borrow $100,000,000 or so and or-

ganize something. I am only pointing out that corporations of this sort are one form of insuring continuous business. Those corporations were once units of moderate size. They combined perhaps without an entire knowledge of the economic consequence, but they have attained that kind of manufacturing and financial independence which the smaller link-in-the-chain company finds itself so much in want of.

Other methods are open to the man of smaller resource—if he associates with his fellows. A manufacturer with assets of half a million dollars is not a commanding figure, but when twenty such men get together they will have assets of $10,000,000, and the twenty, acting as one, find that they have something approaching authority. For instance, chair-making has been in the main unremunerative; it is an in-and-out sort of business. I think that there were more than 5,000 styles of chairs. No one manufacturer had a big enough business to make it worth his while to have an exclusive source of raw material and he was always in danger from speculation at one end or from price-cutting by some maker who did not know his costs at the other. Chairs are

necessities. The total volume of the luxury maker is not very great. Also it does not cost much to start up making chairs. If a style put out by one manufacturer becomes popular, another manufacturer can quickly shift to that style; perhaps twenty makers will go to that style and flood the market. Alternately the public has paid too little or too much for chairs. The manufacturers themselves were always opening up and shutting down. And most of them, most of the time, were hard up. It ought to have been a good business—but it was not. Finally a number of the makers, at first informally and later formally, came together.

They found that a thousand or more styles would satisfy every possible demand. They found that they were spending too much money in transportation. They found that no factory had a sufficiently large business to devote itself to a single style of chair. Therefore they pooled their interests in one company of considerable power and now, although the combination is hardly under way at the time of writing, the savings promise to be such that practically every style can be sold at a much lower price and yet at a much higher profit than previously.

These are examples of actual merger of interest. We have still a different kind which is working out in this country through the trade association and in Germany through the Consortium.

Look at the new German development. The Germans have made some large industrial mergers, the most important under the leadership of Hugo Stinnes. He brought together companies which give an ample supply of coal, ore, and pig-iron production. To these he joined steel and tool steel producers; then he took over the great Siemens and Halske and Schukert interlocking electric concerns. Now he has a practically complete economic unit. Having been threatened with the socialization of industry he went ahead and socialized a good part of it himself! This has been going on in a number of other fields in Germany, but in addition, since it is very difficult for a single German concern to export under present conditions, various groups of industries have combined into Consortiums which not only permit united action in export but compel something more than cooperation at home.

Germany has been forced into this by the unusual difficulties attendant upon her economic recovery. It is, however, but a sign of

the times. England has already formed some large combinations of interest, as, for instance, the enormous Vickers organization.

The American individuality—or perhaps it is rather because we have not yet had a real economic blow—has regarded the formation of large corporations as financial rather than as economic achievements. But the necessity for closer cooperation and closer control is becoming evident and, as one would naturally expect, in those industries which were hardest hit by reconstruction. The trade association can be, in its fullest development, an instrument which will permit the manufacturer of competitive articles made by repetitive process but who is not large enough to go the whole distance alone and who does not desire to lose his identity, the opportunity to compete with the big corporation.

The trade association may, of course, be used for other purposes. It may become an entirely evil organization to hold up prices. It may pass over the economic facts of existence and through stupid leadership convince its members that the way to get more is to do less, and it may combine with labor in a vast buccaneering program—an example of which was furnished by the building trades of New York.

There is, however, no cure for the economic idiot. He has to be permitted to bump himself and after half a dozen bumps, if he is not dead, he is cured.

On the other hand the trade association can organize itself sectionally so as to preserve and increase the business of its members and to attain something approaching the even flow of trade that I have described.

Such an association is that of the International Association of Garment Manufacturers. It has not gone the whole distance but is on its way. Another example may be found in the organization of the Cleveland Garment Manufacturers, where the employers and employees combined not to raise prices or raise wages or to raise anything. They reached a working agreement to the end that all might do business scientifically and with a full play of intelligent individual initiative. I have already described that work in a previous pamphlet. To date it has been very successful—and the members are learning with each day.

But these associations started their work, as is proper, at the point nearest home. They started with their own methods of workmanship and with their own costs in cooperative

effort with their employees. When a worker becomes a part of industry through participation in costs and thus has a full knowledge of operations there is no room for the economic illusionist. The object of both associations is first to make the most of what they have and then to go forward with such other steps as may be necessary on the outside to take and keep full advantage of what they have developed.

They are only in a stage of development as are also the Sanitary Potters' Association and the Knit Goods Manufacturers of America—and I mention all of them because they are associations in which my firm has been in charge of the work and is carefully directing cost and planning operations so that eventually the larger ends may be realized.

The work in none of these associations even approaches the ideal—the members must make a living on the way. In not all cases has the cooperation of the employees been had. That, too, is a matter of time. Economic knowledge is something of a century plant. But the members of these associations as individuals are going through exactly the same process of cooperative organization on the basis of produc-

tive work that the best type of large corporation goes through by the consolidation of units. They are preparing to make themselves an economic power that can render service—at a profit to all.

CHAPTER XII

THE ESSENTIALS OF A SOUND BUSINESS

THAT which we have been trying to set out is that a business unit is a tool—that its work is most effective when it is a highly specialized tool. But that this tool must be most skilfully used if it is to be effective. And that all the parts of the business are parts of this tool.

Most business disorders, most depressions (and also most highly speculative periods) have their origin in the less than proper conduct of the business unit. A deal of that for which outside and uncontrollable forces are blamed are only the results of bad business management—of failing to visualize a business as a whole and of failing to get something of a perspective on all business.

If we could consider business only as finance, or as labor, or as distribution, or as salesmanship, it would not be hard to have good business, for any one of these phases can with a little care be brought to a considerable degree of perfection.

It is quite easy to go into a business and point out just what is wrong. Almost any man of average intelligence and with an average flow of language can put down on a card some set of principles governing production, or labor management, or salesmanship, and, examining a business according to his card, can shortly inform the proprietor exactly how the production or the labor management or the salesmanship can be considerably improved. If given a free hand and paid a fee he will make the improvement and the proprietor can then announce to his friends that he has a splendid production department, or a perfectly-managed labor force, or a highly-geared, rapidly-maneuvering sales force—and he can be proud. Any man who studies the best practises in any particular branch of business can make himself a specialist of real value and, for the time being, earn an entirely respectable competency.

For instance, a good production engineer is all-valuable when orders are away ahead of production; and considering business merely as a producer of goods, the engineer can make the business remarkably productive. If there is trouble with labor, then almost any diplomatic man can settle the labor end.

Go through all of the various branches of

business and if the pressing need of the moment is for perfection in one branch or another that need can be approximately met. A practising industrial engineer is regarded as a doctor and he is called in only in an emergency and then to cure a specific illness. Or, to put it another way, he is asked to build up some weak part of the business body. The business may have an uncomfortable stiffening of the joints and it may be that this stiffening is not due to some local trouble but is traceable to a number of blind abscesses to remove which will require an operation. The engineer will rarely be permitted to operate—he will be forced to content himself with a purely temporary local application and will leave, knowing that the trouble is bound to recur unless its actual cause is removed. Or again he may be asked to build up a weakness. He is not asked to make the whole body normal; he is expected to prescribe exercise, let us say, for the chest and if he does his work thoroughly, the business will have a Sandow-like chest but the legs, not having been included in the order, remain grotesque and tottering spindles.

Now all of this is very unsatisfactory to an industrial engineer taking the larger view of business. It is infinitely more satisfying to

treat these diseases not as such but as the results of fundamental disorders and then to organize the business unit to prevent their recurrence. A good deal of progress is being made in the way of preventive medicine, but unfortunately very little progress is being made in the direction of business-building as opposed to business-curing and the reason for this is understandable.

That which we loosely call a business is an economic process and, whether we know it or not, is permanently successful in the degree that it serves society. But hardly any one ever enters business for the sole purpose of serving society—which is peculiarly fortunate, for the altruists in business are ever so much more of a nuisance than the sordid money grabbers. The altruists spend all their time studying the map of perfection and get nowhere while the baser souls see something on the next street and go to it. A man is properly in business to make money and he is entirely right in insisting on being thoroughly shown that business, considered as a service, is more permanently remunerative than business considered as a haphazard array of opportunities. Hence he wants to be fixed up for his opportunities—not for service. He has not been shown that.

It has been the purpose of this book to do something toward making the larger demonstration.

Let us, therefore, consider these principles as starting points:

(1) The object of industry is to produce goods and not money. Money will, however, result from the proper production of goods and in a quantity in proportion to the service rendered. This presupposes of course a money which is a medium of exchange and which represents value.

(2) The capitalistic system with intelligent private ownership will bring a larger measure of social justice than any system which has yet been proposed and it can provide for giving to each what he deserves.

(3) Human nature is essentially selfish and will remain so. Any theory of economics which begins with the changing of human nature must fail and in practise will bring about continuously worse instead of continuously better conditions. A successful practise must begin with enlightening—not destroying—self interest.

(4) A socialization of industry, although theoretically perfect, neglects the human equation and the force of leadership. It presupposes either an automatic functioning of in-

dustry or the direction of industry by supermen. There is nothing automatic about industry and there are no supermen. We cannot fill a vacuum by willing it to be filled. This is the sustaining theory of impersonal production for use.

(5) The numerous and easily-catalogued inequalities which are present in our system spring from defects of the system. They arise from a wholly natural misuse of the system. By breaking down our present system we can certainly get less than we now have. By improving it we can certainly get more.

No man is simply in business. He is, whether or not he knows it, a part of a great big machine. If that machine stops, he stops. The mere declaration by a man that he does not care what happens to any one else so long as he "gets his" does not make his statement true and neither does it get him "his." A farmer may declare and may organize himself with his fellows to obtain \$5 wheat and he may get \$5 wheat, but if he does he will not get \$3 shoes or \$15 suits. It is hard, if not impossible, to realize our complete interdependence and perhaps it is just as well that we should not think too much about it, for then we get to

monkeying with the business of others instead of looking after our own business.

Since the whole is made up of many parts we can make a wholesome if not a spectacular contribution to the general welfare by putting our own personal houses in the best possible order. And the nice part of this is that instead of having to hang around for posterity to give us our just reward we can get it right now and in such shape that we can draw on it in the bank. That is why John Smith can well find an interest in our social structure.

Summing up, let us see if we can discover what is a good business and how it can be organized.

I. A unit of business is a tool with which to do a certain job. We have been fooling along manufacturing for money when really we must manufacture for service. The best business is that which in its various sections is so exactly coordinated that it can, quite without waste, render the service for which it is designed. Salesmanship, then, becomes primarily the making of an article that people want at a price that they will pay, and secondarily the demonstration of these facts to the possible purchaser. Service in the sense in which I use

it means giving the best possible article to the community at the fairest possible price and at the same time adequately paying labor and a properly apportioned profit. A low price to the public, a fair wage to the workers, and a fair profit to the owners are complementary factors and will be in entire complement when business is properly adjusted to perform its function. This adjustment can be made only through skilled planning. The man who has thus coordinated to produce values is the man who will stay longest in and make the most out of business.

II. In order to give the highest service the production must not only be of a standardized product made through repetitive process but the production must be as nearly as possible continuous. The plant is a tool and the machinery should be so nicely adjusted to a certain kind of work that even a comparatively slight change in operations will destroy the profit for the time being. In the highest type of modern production one cannot first sell and then make, but one must so coordinate the making and selling as to form a production scheme for the establishment. This is the gospel of volume production and it determines the kind of machinery, the kind of labor employed, the

planning and location of the building, and every other feature of importance.

Naturally the most efficient tool is one especially made and adjusted for the work in hand. The most efficient worker is one who masters all of one subject or operation. This coordination and application result in low unit costs—but only if kept employed. They must not only be kept continuously employed but employed at the work for which they are best suited.

The natural progress of industry makes impossible the intermittent work which is at the very root of the objections to that capitalistic scheme of affairs under which we live. The owner cannot generally make and then hold for a price because by the time he has sold off his stock the interest charges and depreciation upon the plant have combined to eat up more than the profit he hoped to get.

Thus it is to the common advantage of the worker and the owner to keep the plant in operation. If the capital which bought that machine expects to get a fair return it must get it at the expense of the worker and of the public—taking the near view. Taking the far view, it gets it at its own expense. The worker who receives less than a full wage has a decreased buying power. The public that gets

an article at a high price cannot buy much of it and it must pass the higher price around the circle and thus eventually rob the capitalist's money of a part of its buying power. The use of automatic machinery, the sub-division of labor, and the application of power are only narrowly to be regarded as manifestations of ingenuity. In their larger view they are parts of a social development in the way of making more things with fewer men. They are part of the transition of the man from the purely beast stage into the higher levels and there can be no stopping the progress—even if any one were so thick-headed as to desire to stop the progress.

III. The plant itself—that is, the structure of the building, its location, and all that concerns it, partake also of the tool idea and are, whenever possible, to be designed exclusively for the work in hand. This is the ideal; it is seldom possible of realization because a business does not begin life as an adult but subsequent arrangements are determined by the approach to this ideal with the thought ever in mind that modern business puts into plant and equipment the smallest sum possible per unit of production.

Note that I say unit of production, for other-

wise the impression might be gained that I advocate a penny-wise and pound-foolish policy. Quite the reverse; it may be greater economy to spend a million dollars than ten thousand dollars, for with the larger sum the unit cost may be reduced. The point is that each expenditure is but the part of a whole and should not be made until conclusive testimony is in hand that only by spending can the additional output be had in an economical way. And the only manner in which to obtain that conclusive testimony is by so aligning the plant with production as to make sure that it will be a surely cutting tool.

IV. Philanthropy has no place in business, and prices, wages, or profits are not to be considered in the light of being fair or unfair. High prices may or may not be immoral; low prices may or may not be immoral. We do not have to decide these points. The only point necessary for decision is what is good business? A plant will not be idle if its product is put within the reach of almost everybody. The wants of man are infinite. It is up to the man who desires to supply some of those wants to put his article on the market at such a price that it may be bought by a constantly increasing number of people.

From the owner's standpoint it is not the percentage of profit per sale that counts but the annual profit, and it is growing increasingly evident that the business which has a large annual profit on a comparatively small number of sales or turnovers of capital at a large margin per sale is not nearly so stable as the business which gains a large annual profit by a great number of turnovers at a small profit per turn.

The premiums should go to the man who can so turn capital as to make the largest possible percentage upon it. The whole trend of scientific business is to make the capital small in proportion to the sales and then make that capital move rapidly. The capital may have to be large—for the best business is done with the best facilities and these cost money—but in relation to the sales the capital should be as small as possible. For the profit upon the capital as evidenced, say, by dividends, is a matter of circumstances. The profit on the capital is never to be reckoned as the whole sum made by subtracting the outgo from the income. For in such a case one would jeopardize the capital for the sake of the profit—which is hardly business. Profit is money that

can safely be taken out of the business—it is not a surplus to be gained only by liquidation.

V. Price and quality, considered together, form the real manufacturing problem. You can put cheap materials and cheap labor through ill-suited machinery, turn out a poor product and sell it at a low price. There is no permanency in that sort of business. The real business comes from putting the very best materials through exactly fitted machinery managed by skilful labor so that an absolutely first-class article will go through at a minimum cost. Then only can you sell a good thing at a low price, make a fair profit, and establish a solid trade.

In this high development the plant becomes a tool and the sales force that once just went out and sold has to sell what that tool can make, and that only. When you have acquired that tool you will know how to fix costs. You will not be up against the usual costing problem of finding out how much time and money it takes to file down a thousand castings. You will have a machine that will do that work. This machine will not merely be a machine; it will be a tool for that particular job. If a workman has a thousand pieces to gage he will

do them more quickly with a fixed gage than with a variable one, and it is exactly the same with the plant and every portion of it.

The point that I want to make is that real efficiency is not to be attained by scattering but by concentrating on a single product, and then it is up to the management to see that they cash in on the tool they have designed. This rigidity of plant will in time become so marked that the executives will no more think of taking on a dissimilar line to keep the plant going than the manager of a foundry would think of accepting a large order for fancy sewing. If the salesmen find that they can dispose of a new line, or if the advertising and experience of the company point out profitable sidelines, then the question to be decided will be whether these new articles had not best be manufactured by a new unit. The modern plant producing at a high rate and a low cost cannot do odd jobs; it is a fixed instrument which can be readjusted only with difficulty.

Thus we find that selling is not one department and making another, but that the two have to work in the very closest harmony if that good business is to be attained which is a service to the public and which consists of low prices and high profits. There is no other

way. The new selling and the new advertising sell the produce of a tool and not simply a product.

VI. It ought to be evident that an industrial plant is only an inconveniently sorted mass of junk unless some one is around to see that the bricks, mortar, and machinery become tools of production. Up to date we have not been able to erect anything in the way of a gentle and obedient Frankenstein monster that quite untended would rattle its fabricated bones for the benefit of its fabricator.

To put the matter more concretely, an industrial adventure needs the services of human beings. Or looking at it from another angle, an industrial organization exists only because it serves—not that it may serve—human beings; in order to perform that service it requires a certain service from other human beings.

A lack of recognition of the fact that really we are all engaged in service, however much some of us at times would like to think we are principally engaged in being served, is back of a good deal of the misconception of the relation of the human element in business. When we speak of the human element we are apt to think only of the men who work for wages and of

their pay. This gets us into trouble right at the outset, for although executives and managing directors do not commonly strike and march around the place bearing placards, they are just as much a part of the problem of the human element in industry as are those men who work strictly for wages. For where the wage earners are chronically dissatisfied and sullen you will nearly always discover that the executives do not know their jobs any too well.

VII. The organization of the human element is possibly the largest part of the whole organization of business. But it is only a part and it is not the whole; also it is something different from what we call the labor problem. For it comprehends both those who work with their hands and those who work with their heads—those who fabricate and those who direct—the worker, the technician and the executive.

One thing, however, we have learned. It is this: While the restriction of production at an appropriate moment may bring advantage either to the employer who shuts down to sell off his stock at a high price, or to the employee who makes a group demand for increased wages at a moment when large production offers a big profit to the employer, yet in the end neither side really benefits. The perma-

nent benefits come from an always larger and larger production at a decreasing cost—that is, with a minimum of waste. It is the part of industrial engineering to teach this latter truth through putting theory into practise.

The well-being of any particular industrial institution depends upon how well it produces and thereafter sells. Therefore any labor policy which attempts to consider labor as apart from production, as a commodity, is bound to fail. One of the troubles with the average trades union is that while declaiming that labor is not a commodity, it insists that the service of men should be bought in bulk and at a market price fixed by the union. That is, the union really insists that labor be considered as a commodity and have its price fixed.

I am inclined to view the whole question of unionism as one dependent wholly upon the circumstances. Any individual case can be decided by putting down what the business wants to be and then endeavoring to discover whether its legitimate objects, which include the good of all concerned, can best be achieved by an agreement with a union, by an agreement with the employees, or by proceeding under no agreement whatsoever.

VIII. An organization is nothing of itself.

When one speaks of the automatic, smooth-running machinery of Big Business, one is talking nonsense. The wheels do not go around of themselves—they must be propelled by leadership. There is more danger, we are just beginning to realize, from over-organization than from under-organization because the former discourages leadership.

System up to a point facilitates operation, it takes the conscious effort out of small movements and liberates the mind for larger affairs, but carried beyond that point there is a likelihood that while conserving it will be wasting.

IX. Most of the dangers in business finance arise out of putting the speculative side above the fabricating or merchandising. It is just as dangerous for a corporation to speculate in goods as to speculate in the stock market; in many ways it is more dangerous because very few staple markets are nearly so well organized as is the stock market and hence one cannot often get so quickly out of goods as out of stocks.

The first policy, therefore, to be determined in any business institution is whether the strictly business or the strictly speculative feature shall dominate.

The mixing of manufacturing and selling

with speculation is the greatest of all deterrents to sound business practise and organization. It is the function of a manufacturer to manufacture, of a merchandiser to merchandise. They should look for their recompense in the results of the skill with which they perform their functions. Their profits per dollar must necessarily be small—and arduously earned. It is hard for men pursuing this conservative course to see others come into the market and, without manufacturing or merchandising skill, clear stupendous profits merely by buying low and selling high. If a market during a considerable period continues to rise one will find very few business men who are able to keep their heads and to remember that a day of reckoning is inevitable. Almost without exception they will cast aside the principles upon which they built business and engage in a mad scramble of speculation.

We can borrow to finance operations but borrowing to meet depletions of capital or for any capital purpose holds within itself the highest danger for we may thereby begin that endless chain system of finance that must end in absolute ruin.

X. The end of planning is not the installation of chaste, metal fixtures filled with neatly

lettered cards. The end of planning is so to shape the manufacturing, selling, and financial portions of a business that all will function perfectly together, and the business cycle of that particular institution revolve with sweeping grace.

An unplanned business may be said to lack orchestration. No matter how individually skilled the members of an orchestra may be, their efforts will go to make business only for the undertaker unless some one has reasonably adapted the score to the instruments. Otherwise they will not make music but only a frightful noise.

It is the part of management to manage. It is the part of science to overcome difficulties. Anybody can accept things as they are. Unscientific business—that is, unplanned business—accepts things as they are. The unscientific business man accepts good times with perhaps a tendency to give full credit to himself for bringing them on, but anyhow he is glad. Also and eventually he accepts bad times as an excuse for lack of forethought and he is sorry.

Keep down the fixed investments to the lowest possible point. Keep a large and instantly available reserve fund in cash or convertible

securities, and regulate your buying so that you will not buy beyond the ability of the money that you have in hand satisfactorily to margin your stock if the market takes a set against you. It is possible in straight manufacturing or selling to get along on a shoestring but successful speculation requires a lot of money, and it is suicidal for any man not in the capitalist class to attempt to speculate in commodities.

We have already decided that we shall not speculate—that we shall buy only what we need and in such time that it will be on hand exactly when we need it. In merchandising the amounts of these purchases will be guided by the sales that we determine to make. We have here to do more largely with manufacturing; merchandising is guided by a few general principles and a multitude of detailed applications.

Manufacturing may be of three kinds:

(1) Job work in which each order is special and only a comparatively small amount is made on order.

(2) The continuous repetitive production of a single type of article.

(3) Quantity production to the customer's order.

The second of these three types of manufacturing is the most economical, for the patent reason that if we do only one thing we can so regulate our tools and our progress of work as to do each operation in the best possible way.

XI. The principle that a manufacturer shall contribute a service and simply add the cost of that service to the value of the raw material, thus keeping his prices consonant with the buying power of the public, will have little force if somewhere in the processes before him or in the processes after him, the speculative element so controls the situation that he cannot function on schedule.

The small corporation is uncommonly useful and forms a necessary part of our life but it cannot exist in competition with the large corporation and there is no reason that it should.

So while there is no place for the small company in the manufacture of standardized articles there is a very large place for it in the making of patented specialties or articles which have certain of the indicia of craftsmanship or which are really craftsmen's products.

The trade association can be, in its fullest development, an instrument which will permit the manufacturer of competitive articles made by repetitive process but who is not large

enough to go the whole distance alone and who does not desire to lose his identity, the opportunity to compete with the big corporation.

There we have, as I see them, the principles of sound, continuing business.

THE END.